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ABSTRACT

This manual represents a part of the work performed in the past two years in connection with Trenton's Project -- Building a Comprehensive Planning Capability with EPPBS -- funded through ESEA Title III. The "capability" refers to a set of concepts and procedures that will allow the Trenton Public Schools to raise the level of debate in planning and resource allocation, relate expenditure to educational goals and priorities, and generally enlarge the base of productive communication and cooperation between the schools and interested members of the community. As a blueprint for implementing the System for Trenton's Educational Planning (STEP), this manual is intended for the users of STEP, those persons who must perform the countless tasks (including some sophisticated mathematical and computer procedures) that are part of the annual cycle. Related summary level documents are: ED 056 371-373 and EA 004 489. (Computer printouts in each section may reproduce poorly.) (Author/JH)

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STEP

SYSTEM FOR TRENTON'S EDUCATIONAL PLANNING

USER'S MANUAL

Government Studies & Systems/3401 Market Street/Phila., Pa
19104

Dr. David E. Weischadle

Project Director

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Trenton Public Schools

Division of

Research, Planning, and Evaluation

Trenton, New Jersey

July 1972

EA 004 550

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City of Trenton

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NOTE TO USERS ON RUNNING COMPUTER JOBS

Computer software in STEP, written in FORTRAN IVG, was tested and debugged at the University of Pennsylvania Computer Center (UPCC). Therefore, the JOB cards and Job Control Language (JCL) cards used in the various card decks as shown in this manual reflect the procedures in effect at UPCC for FORTRAN language programs. Accordingly, users are cautioned to familiarize themselves with the IBM JCL Manual for specific JCL details, as required, and with the procedures of the computer facility at which the STEP software is to be run.

I.0 INTRODUCTION AND SUMMARY

The Project

This manual represents a part of the work performed in the past two years in connection with Trenton's Project -- "Building a Comprehensive Planning Capability with EPPBS" -- funded through ESEA Title III. The materials in the manual were developed by the staff of Government Studies and Systems, Inc., consultants to the district's Division of Research Planning, and Evaluation, after extensive discussion and collaboration with representatives of the administrative staff, teachers, supervisors and specialists, and community efforts. The "capability" mentioned in the project title refers to a set of concepts and procedures which will allow the Trenton Public Schools to raise the level of debate in planning and resource allocation, relate expenditures to educational goals and priorities, and generally enlarge the base of productive communication and cooperation between the schools and interested members of the community. This manual may be regarded as a representation of that capability, a blueprint and explanation of how TPS may achieve these broad goals.

This is the first complete version of the System for Trenton's Educational Planning (STEP); preliminary concepts and procedures have been sketched in earlier reports and working papers, but this is the first version, in one set of covers, of all the automated and manual procedures required to complete the annual planning cycle which is at the heart of STEP. Like all complex systems, however, STEP is still in transition. During the third year of the project, staff of TPS, augmented by consultant services from GSS, will walk through the annual cycle, using as much of the data as is available, with a view to "shaking down" the technical and conceptual problems which remain. An important part of this process will be a kind of apprenticeship for the system's users, in which, working closely with consultants, the details of the system will be taught to those responsible for operating it beyond the term of the consulting contract. As a result of these interactions, improvements and modifications will be added to the system to produce a Version II in 1973.

The staff of GSS has profited immensely from the continuing interest and assistance of countless persons in the Trenton community, particularly the members of the Technical Task Force (the project's advisory group), in which members of the administration, teaching staff, community organizations, government agencies, and interested professionals conducted a series of probing and productive meetings.

Contents of the Manual

As its title suggests, this manual is intended for the users of STEP, the persons who must perform the countless tasks, including some sophisticated mathematical and computer procedures, which are part of the annual cycle. For that reason, much of the material will not be of direct interest to the educator or general reader who is more concerned with concepts than with detailed procedures. Thus, Part II of the manual provides and overview of the system, the concepts on which it is built and the milestone events which occur in the annual cycle. Readers interested at this summary level may further profit from reading STEP: SYSTEM FOR TRENTON'S EDUCATIONAL PLANNING, YEAR 1 FINAL REPORT (VOL. I), ERIC ED 056 371.

For those whose information needs are greater, or who are intrigued to learn more about the procedures outlined in PART II, Part III includes the detailed procedures in each of the system's modules:

- Goal Setting and Indicators
- Enrollment Forecasting
- Cost/Resource Requirments Forecasting
- Revenue Forecasting
- Project Design
- Cost-Utility Evaluation (Project Selection).

While each of these procedures involves computation and quantification, the Enrollment, Cost/Resource, and Revenue Modules are particularly long, because they involve extensive computer operation as well. Those persons in the district charged with operating the computerized procedures will find in these sections the conceptual design, program documentation, input preparation procedures, and output formats associated with those modules.

Part III is followed by two appendices. Appendix A, "The Delphi Technique Applied to Predicting Effectiveness of Educational Projects," describes a procedure which will be useful at several stages of the system in which subjective estimates must be made. Appendix B, "Inventory of STEP Automated Programs and Reports," reviews the computer capabilities of the system.

Using the Manual and the System

The manual describes a complete planning system, broken up into stages and functional modules. While it is envisioned that the entire system will be used, it is possible for any of the procedures described in Part III to be used individually to facilitate district planning and management. This feature is of importance to persons in the district more concerned with parts of the system, rather than all of it, and also to persons in other school districts who find it feasible to use parts of the system, rather than all of it. In addition, the overall system concept and cycle may be employed with different detailed procedures by TPS or other districts as well. This overall planning approach, developed largely by GSS staff, has proved useful in other school districts, in state education agencies, and in other branches of the public sector, such as planning for health or criminal justice. The current detailed version, however, reflects the particular needs and preferences of the Trenton Public Schools.

In employing this system, or its parts, it should be remembered that procedures in themselves do not guarantee excellent planning. Successful use of STEP, like successful use of almost any educational resource, requires hard work and inventiveness of the people who employ it.

II.0 THE ANNUAL PLANNING CYCLE IN SYSTEM FOR TRENTON'S EDUCATIONAL PLANNING (STEP)

Preliminary Concepts

STEP is a derivative of the planning-programming-budgeting system (PPBS) approach to planning and resource allocation. To apprehend its basic concepts, some familiarity with PPBS is useful. First, however, it is important to establish what PPBS, and therefore STEP, is not.

Even in the short time (about 5-8 years) that PPBS has been discussed and applied by educators, there have emerged numerous confusions between it and other educational innovations. Before we explain the elements of PPBS, we should clarify some things which PPBS is not.

1. PPBS is not one system or approach. It is a set of concepts - an analytical discipline - which can be manifested in thousands of varieties of school planning and decision-making. Indeed, some observers have noted that there is a little PPB in every good budget, even if the budget-developers never heard the term.

2. PPBS is not a computerized approach to planning. There is no activity required in PPBS which could not be done manually by the planners and their staffs. However, thorough PPBS planning requires a great deal

of data and thousands of calculations, so that the computer is an extremely valuable computational and data management aid. (A small school district could, conceivably, do PPBS without computers, but the Trenton Public Schools would find it infeasibly cumbersome.) Further, a school district, if it is choosing its own computer system, should not choose the system primarily on the basis of its PPBS requirements. In those districts where computer needs can be satisfied with a modest computer configuration, it is pointless to install a large configuration to perform PPB computations - most of which take place within about 3-4 weeks of the year, and can be run economically by a computer service company.

3. PPBS is not an information system. An information system, or management information system, is used in PPBS, and the better the district's information handling capability, the easier to do PPBS. Note, however, that PPBS requires only a small portion of the data that a district routinely requires to manage and operate itself.

4. PPBS is not a management system. PPBS, as we will explain below, is a planning concept, not a management approach. PPBS planners are not concerned with the day-to-day operation of programs, or the week-to-week

collection of data. PPBS has a multi-year perspective, and generally abstracts from the minutiae of school operation. Of course, a district's long-range planning has important implications for its short-term management, but, to repeat, PPBS is not a management system.

5. PPBS is not an accounting system. Perhaps the greatest confusion about PPBS has been its association with novel accounting procedures, a confusion that has been somewhat intensified by the participation of several major accounting firms in PPBS projects. Accounting is a management-control function, of only marginal importance to long-range planning. PPBS does employ innovative budget formats and cost analyses, and these are facilitated by having a program accounting system, but the connection is not obligatory. Most districts who claim to use PPBS, in fact, have program accounting systems.

   Closely related to this confusion is the belief that PPBS is merely a new way of presenting the budget - in program accounts, rather than functional accounts. It is true that one of the important components in PPBS is a program-budget, but PPBS is more concerned with the process of developing and evaluating the program budget than with the document itself. Again, many school districts present their budgets in program format, but they do not employ a planning-programming-budgeting system. It is acceptable to use "program-budgeting" as a synonym for PPBS, provided one is referring to the budgeting process rather than the budget itself.

6. PPBS is not just the use of measurable goals and objectives in educational planning. Although this is usually a requisite for PPBS, a district should not delude itself that having such objectives is more than a part of the program-budgeting process.

7. PPBS is not a system for cost analysis or cost control. Though PPBS planners may employ numerous economic and management science techniques to analyze the cost of past and future programs, or, indeed, apply certain cost-reducing methods to educational programs, these activities are not, in themselves, PPBS. PPBS is concerned with cost-utility analysis, the relating of costs to desired outcomes, not just costs alone.

8. PPBS is not a replacement for existing business and accounting activities. As we will see below, PPBS serves a function different from those of the business and accounting activities of the district. PPBS is relatively useless as a means of seeing that purchases are made correctly and paid for appropriately; nor can it be used to issue payroll checks or perform other business functions. PPBS gives a district a capability it never had before, but does not necessarily replace any existing cluster of activities.

This inventory of confusions and disclaimers leads us logically to ask what PPBS is, how it evolved, and what special needs it serves.

What a PPBS System Is

A planning-programming-budgeting-system (PPBS) is a set of procedures for strategic planning. In a school district, strategic planning is the process of deciding on the multi-year goals and objectives of the district, assigning priorities to the various goals and objectives, evaluating alternative ways of achieving those goals and objectives (each with different costs and probable effects), and selecting that course of action which achieves the objectives in the least costly way. Thus, PPBS relates what is spent to what is accomplished, resource inputs to educational outputs. The PPBS analyst, once he has developed a cost-effective plan, can increase output only by increasing input (money), and he can cut costs only by cutting the expected output of the district. In a sense, PPBS shows the Board and taxpayers what the community is getting for its monies, rather than what it is spending.

The users of STEP will be investors of the public's money, rather than spenders. Each dollar committed will produce some return - in this case, a change on the district's Indicators of Quality. (Those changes of expenditure caused by inflation will, of course, produce no change in return; "inflation" may be defined in this way.) The Board, moreover, will be able to choose among alternative budgets, each with different expected return as well as different costs.

The important theme that unites this description is the relationship between money and educational effectiveness. The most important difference between STEP planning and the many varieties of planning that now exist in TPS is that long-range educational and financial planning will be part of the same process. At present, several factors militate against this unified process:

1. Educational and financial experts are relatively ignorant of each other's disciplines and needs.

2. Except for some Federal projects, there is no multi-year planning.

3. There are no specific goals in the district, and no clear criteria for evaluating the district or its programs. Thus, both educational and financial decisions are "evaluation-proof."

4. The current budgeting format - the "Handbook II Chart of Accounts" is nearly useless in making resource allocation decisions.

This last point cannot be overemphasized. J. Alan Thomas makes the point succinctly when he says:

> "These categories (the Handbook II accounts) are useful for descriptive purposes. However, they do not constitute useful breakdowns for the purpose of decision-making, since there is no way of relating the various inputs included in these categories to either programs or performance objectives. In fact, they may impede decision-making, by engaging boards and administrators in the partially irrelevant exercise of examining the manner in which resources are allocated among these categories.

> From the point of view of the school board member or layman who wishes to use the budget to inform him about the manner in which the system is allocating its resources, the..... categories may appear to be developed for the purpose of concealing rather than revealing information."
>
> (J. Alan Thomas, The Productive School, 1971)

The obscurity of these budget accounts has engendered a peculiar style of budget decision-making in Trenton, and other, public schools. As Hartley puts it:

> "Local school budgets tend to be prepared in the 'incremental style,' which means that the primary basis for next year's budget is this year's budget. The major difference between the two is likely to be only an increase in each of the traditional categories of object of expenditure...little attempt is made to evaluate the various programs, or outputs, which are presumed to be supported by the budget."
>
> (Harry Hartley, Educational Planning-Programming-Budgeting, 1968)

There is almost universal accord that the function-item budget format now used in the Trenton Public Schools is virtually useless as a planning instrument - whatever its merits as a cost-accounting system. Indeed, one of the most innovative aspects of STEP is that the determination of the detailed function-item budget for the next school year (Year 1 in the five-year plan) is done after all the important educational and financial decisions are completed. The operating budget will follow as a necessary consequence of the approved plan, instead of the reverse, which is now often the case.

In order, therefore, to attain a strategic planning capability, TPS will require the following elements associated with Planning-Programming-Budgeting Systems:

First, a system for setting measurable performance goals for the entire district; data about the success of the district in achieving these goals will constitute an evaluation of the district's effectiveness. Decisions about where and how to invest the district's resources will be determined by an explicit statement of the goals and their priorities.

Second, a program structure which divides the district organization into its real functional components - not those described in the current budget accounts. These components will be called programs - and be further divided into subprograms - and each program will be responsible for achieving some part of the district's objectives. Further, for planning purposes, moneys will be aggregated according to those programs, so that costs can be related to output on a program by program basis.

Third, a cost-benefit, or cost-utility model for making decisions, that is, a formal procedure for evaluating alternative plans before they are approved, and determining which gives the desired return at the best price.

In order to employ these elements of the planning system, several technological aids are essential:

- an information system to support planning
- an enrollment forecaster
- a revenue forecaster
- a cost and resource-requirements forecaster
- an output forecaster

Requisite Attitudes

Most descriptions of PPBS devote little space to the problem of attitude. In fact, in order for PPBS to be successful, it is essential that its users agree, as least somewhat, with the following statements:

1. The effects of education are measurable, or, more specifically, anything a school district sets out to do deliberately can be measured.

2. It is possible to separate discussions of educational ends from discussions of educational means.

3. The future, to some degree, can be "made to happen" the way we want it to.

4. The public is entitled to an explanation of the reasons behind decisions by the schools' policy makers, and, when the public believes the reasons are sound, they will support the schools.

5. The fact that there never seems to be enough money for the schools does not mean that the schools cannot be changed or improved.

The Annual Planning Cycle

This section contains a description of the major clusters of activities that will occur during the planning cycle. Note that this description presumes that the developmental work is completed and the system is refined and installed. This description of what the final system includes serves two purposes:

- It explains the benefits that are not immediate, since full utilization of the system is at least two years away.
- It explains the purpose of the various design activities that are now under way.

In this section, and the one which follows it, we will present the overall model in increasingly greater detail; this detailing process will continue during the second year of the project and terminate in Year 2 with detailed operational definitions and user procedures for each aspect of the system.

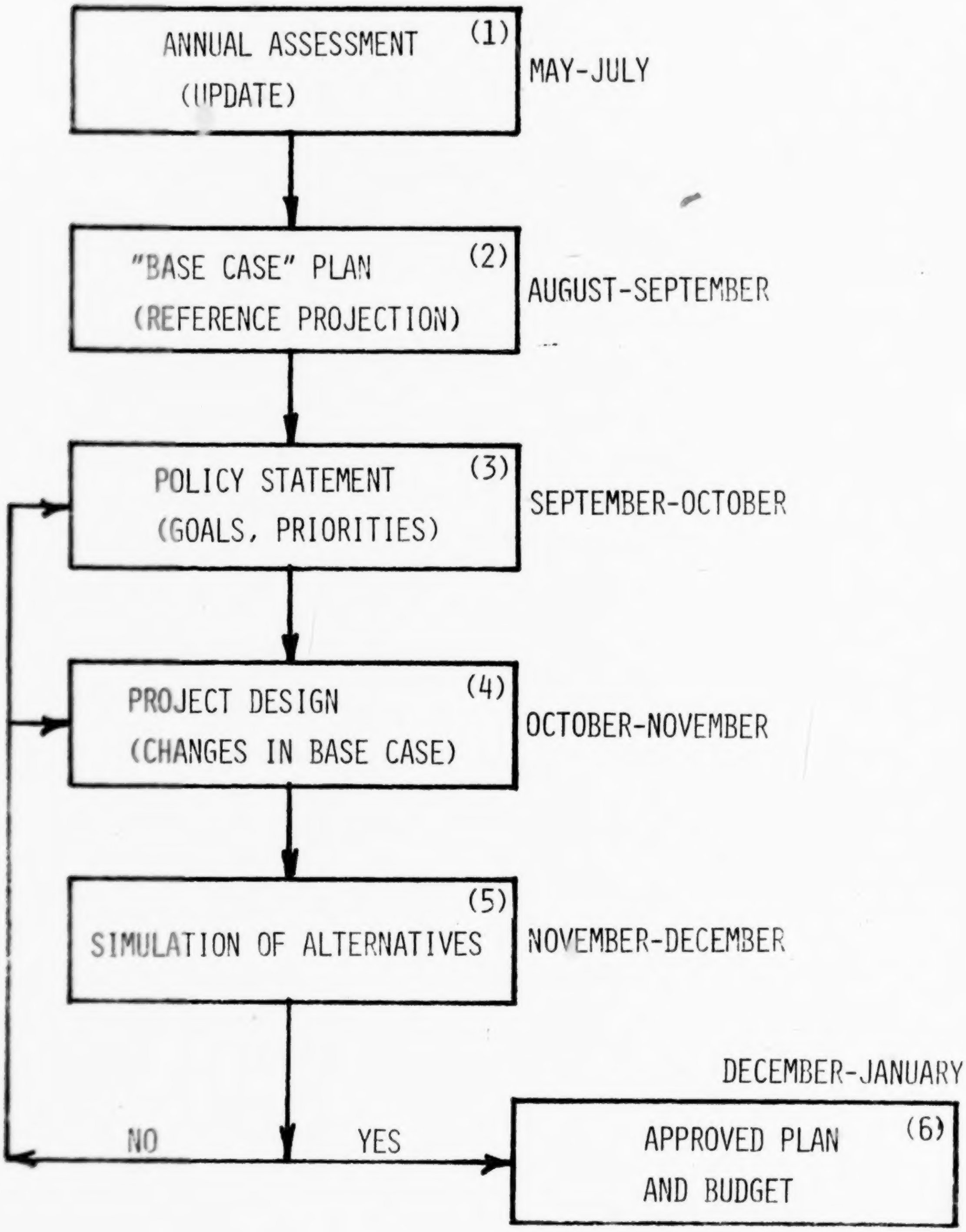
STEP: DETAIL LEVEL I

At the highest level of abstraction the flow of elements in STEP is as follows (See Chart II-1):

Stage 1 - Assessment of current educational costs and benefits, and an updating of all those files necessary for operating the computerized elements in the planning system. The assessment is, thus, a collection of current facts, and also current ratios that will be used to generate forecasts of the future.

CHART II-1

MAJOR ELEMENT IN THE STEP CYCLE


ANNUAL ASSESSMENT (UPDATE) (1)
MAY-JULY
"BASE CASE" PLAN (REFERENCE PROJECTION) (2)
AUGUST-SEPTEMBER
POLICY STATEMENT (GOALS, PRIORITIES) (3)
SEPTEMBER-OCTOBER
PROJECT DESIGN (CHANGES IN BASE CASE) (4)
OCTOBER-NOVEMBER
SIMULATION OF ALTERNATIVES (5)
NOVEMBER-DECEMBER
DECEMBER-JANUARY
NO
YES
APPROVED PLAN AND BUDGET (6)

Stage 2 - The generation of the base case. After running assessment data through the system's forecasting procedures, five-year forecast of what the school district's costs and benefits will be, if the previous year's plan is approved without change for the present planning period.

Stage 3 - Policy deliberation. The desired levels of school district effectiveness are reviewed, to set new objectives, priorities, and constraints, or to approve those previously developed; this determination involves a community opinionnaire survey.

Stage 4 - If any changes are required by the policy deliberation, the next stage is the design of projects intended to close the gaps between the expected levels of effectiveness in the base case and the desired levels; community groups participate in the project design activities.

Stage 5 - Various combinations of new projects are run through the forecasting models to generate alternative plans, each with a specified anticipated cost, level of output, and revenue requirements.

Alternative plans are considered, and the most cost-beneficial plan for achieving the district's objectives is recommended for implementation.

Stage 6 - That plan which is approved by the Board of Education becomes the approved plan. (If the policy deliberation required no changes, the base case becomes the final plan.) The detailed budget proposal for Year 1 of the plan is generated at this point.

STEP: DETAIL LEVEL II

These broad activities can be understood only by describing their components in more detail. The paragraphs that follow describe these elements at the conceptual level; operational definitions (and user procedures) will be introduced later in this Volumne, and detailed in the remainder of the project.

Annual Assessment

Strategic planning requires an assessment of the organization's overall behavior and effectiveness. The assessment reports facts which are import to the decision-makers and planners; in effect, the assessment is an up-dating of the planning information files, which are aggregated at broad levels. Assessment at the strategic level cannot be expected to do the job of evaluating specific projects or students. An analogous process is the general health examination, in which a small set of physiological measures are taken as a broad index of soundness, and more detailed and elaborate tests may be required if some of the broad measures suggest a problem. The analogy also extends to the fact that broad assessments and general physical examinations are most useful when they are periodic and regular; the most important insights to be gleaned from the current assessment are those measures which show a difference - either positive, negative, or neutral - from previous assessments. (See Chart II-2.)

Current Levels of Effectiveness

In the STEP design, effectiveness is measured by a set of 10-15 Indicators of Quality, scales used to describe the product or output of the school district as a whole. Each assessment measures the overall district on those Indicators of Quality. Selection of Indicators is a part of the system development process; refer to Section III.1 for a discussion of current indicators in STEP.

Current Allocation of Resources

Current year approved expenditures are reported by program category, rather than line-item account. Within each program, costs are aggregated by Staff, Non-salary, and Capital Outlay expenditures.

Current Revenue Data

Included also in the assessment is a summary of the revenues currently available to the district, by source, and, where appropriate, by special purpose. The ratio of the various sources to each other is one of the process variables mentioned earlier. The STEP model will forecast Revenues in accord with the state's new "Bateman" subsidy program.

CHART II-2

STEP: ASSESSMENT

UPDATE DATA ON:

- SCHOOL DISTRICT INDICATOR PREFORMANCE
- TAX BASE AND FUNDING SOURCES
- ENROLLMENT AND ENROLLMENT FACTORS
- PROGRAM STAFF CHARACTERISTICS AND SALARIES
- PROGRAM EXPENDITURES

FEED DATA TO
COMPUTER FORECASTING
MODULES

Forecasting Models

The planning "model" is a set of formulas and computer programs which converts one set of data into another. At this stage in STEP, the model receives the data from the assessment phase, and computes several forecasts, namely, enrollment, indicators, process measures, costs, manpower, and revenues. The planning model works on the assumption that certain ratios vary at a fixed rate (salaries), certain ratios stay the same (staff/student), and others are allowed to vary independently (total students).

The Enrollment Forecaster

The Enrollment Forecaster, which projects students by program and ethnic group, is described in III.2.

Indicator Forecaster

Because the current state of educational theory has developed no scientific notion of how educational activities are related to outcomes, the prediction of future levels on the indicators of quality is necessarily subjective, involving a small group (4-5) of experienced educators (the Review Group). (See III.1)

Cost Forecaster

The cost forecaster expands (or contracts) costs as a function of units of service (change in enrollment), or adjusts costs in certain categories as a function of inflation factors. (See III.3)

Manpower Forecaster

Assuming constant staff to student ratios, the manpower forecaster projects the needed numbers of staff members, by type, as a function of enrollment changes or other factors determined by the planners. Manpower requirements analysis is part of the Cost Forecaster (III.3)

Revenue Forecaster

The revenue forecaster projects the effects of enrollment change, subsidy formula, and tax base change on the total revenues available to the district, assuming no change in tax rate. Certain classes of revenues which do not vary according to predictable rules are estimated subjectively, or assumed to be zero (certain non-continuing Federal grants, for instance). (See III.4)

The "Base Case"

The first major planning system report is called the "base case"; the base case is a candidate plan, showing the effects of approving last year's plan, making no changes in policy or program, showing the impact of changes in enrollment, inflation, and projects previously approved for future implementation.

Note that the current status of the district is not the baseline from which to develop plans. Many administrators and educational planners, influenced somewhat by misleading federal proposal guidelines, make the mistake of identifying needs and objectives on the basis of current data.

Actually, if you are developing a five year plan, the baseline is what will happen in the district over the next five years if your programs and policies are unchanged, not only what it is happening now. To illustrate, suppose that your assessment data shows that 10% of the students in your district have fundamental difficulties in speaking the English language; over the next five years, even if you make no change in your existing plans or programs, that percentage may change. If you have recently initiated a special set of courses for these students, the number may go down; if the migration of non-English speaking persons in your community increases during the five years, however, the percentage may go up. If your goal were to eliminate the problem - if your desired level on the Indicator of English-language competence were "100%" - you could not begin to design projects and courses without estimating what the extent of the need will be if no change is made. The desired level, (100%), is derived from the goal. The objective is to close the gap between the desired level and the expected level (if no change is made).

The purpose of the "base case" is to show the multi-year implications of carrying forward the current plan without change; the base case is one possible plan, a reference projection, to which the policy-makers and administrators can react. (See Chart II-3) It is reasonable to expect that even in the "no change" plan, the district will change strikingly each year. Certainly, the district's enrollments will change - in numbers and type of

CHART II-3

"BASE CASE" PLAN

REPORTS:

- ENROLLMENT PROJECTION
- INDICATOR PROJECTION
- PROGRAM EXPENDITURE PROJECTION
- REVENUE PROJECTION
- REVENUE FEASIBILITY PROJECTION

FEED "BASE CASE" REPORTS
TO POLICY GROUP

students; the salaries will increase (even if there are no new staff members) and the costs of goods and services will also change; the district's revenues will change, even assuming no change in tax rates; projects that were approved in the past will be implemented, causing changes in the district's costs and levels of service.

The base case answers the question: What would probably happen over the next five years if we make no changes in our current plans? The answer to that question is the basis for determining changes - not the current status report.

Depending on the design of a district's individual system, the base case plan includes the following data:

Enrollments Over Time

The base case includes a print-out of the expected enrollments over time, by program and student type (ethnicity).

Costs/Program Over Time

The base case shows the cost implications of the current plan, as a function of inflation and enrollment change. These costs are aggregated by program and for the total district.

Indicator Measures Over Time

The estimated effects on the Indicators are presented out for the five year period.

Staff Requirements Over Time

The base case indicates the number of positions, both new and existing, that will require filling in the five-year period, as a function of both changes in overall faculty size and turnover rates.

Revenue Feasibility Over Time

The anticipated costs are compared to anticipated revenues, and the needed change in tax rate is indicated.

Gaps

The levels on the Indicators are compared to the desired levels (developed during last year's policy deliberation activities) and the gaps between the anticipated and desired levels are shown.

Policy Deliberations

The "policies" deliberated in this phase of the process related only to those affecting planning. The most significant policy decision is to decide what the Indicators of Quality will be, and what desired levels will be pursued by the organization. Other important policies relate to limits on the process relations and parametric ratios, such as class size, salaries, etc.

The annual policy deliberation is, in fact, a review of last year's policy deliberation, to determine what, if any, changes should be adopted in the policy variables. (See Chart II-4.)

CHART II-4

POLICY STATEMENT

- RE-RUNS OF "BASE CASE"
- DISSATIFACTIONS WITH BASE CASE
  - GOALS
  - EXPENDITURES
- REVISED GOALS AND ECONOMIC CONSTRAINTS (DESIRED LEVELS OF PERFORMANCE AND EXPENDITURE

FEED POLICY STATEMENT
TO PROJECT DESIGNERS

Consequently, the planning process, while sustained over a multi-year period, is flexible and responsive to changing environments and new perspectives - as well as changes in the state-of-the-art of instructional practices.

Goals and Objectives

The choice of Indicators is, in itself, a determination of possible goals. The problem of educational goal-setting is not so much a matter of deciding what ends are worthwhile, but, rather, choosing from among the wide range of desirable ends, those that most characterize the administrative philosophy of the district. The goals of the district are simply to improve with respect to the Indicators of Quality; the objectives are to improve some specific amount, in a specific time period.

Chart II-5 is an illustration of the Indicator-Objective relationship, for the Indicator: "Percent of students reading at or above grade level." (The numbers in this illustration are fictitious.)

In STEP, an important element of the goal-setting process is an annual community survey which serves as a significant input to the Board and Administration. (This process is discussed more extensively in STEP, Year 1 Report, Vol. II.)

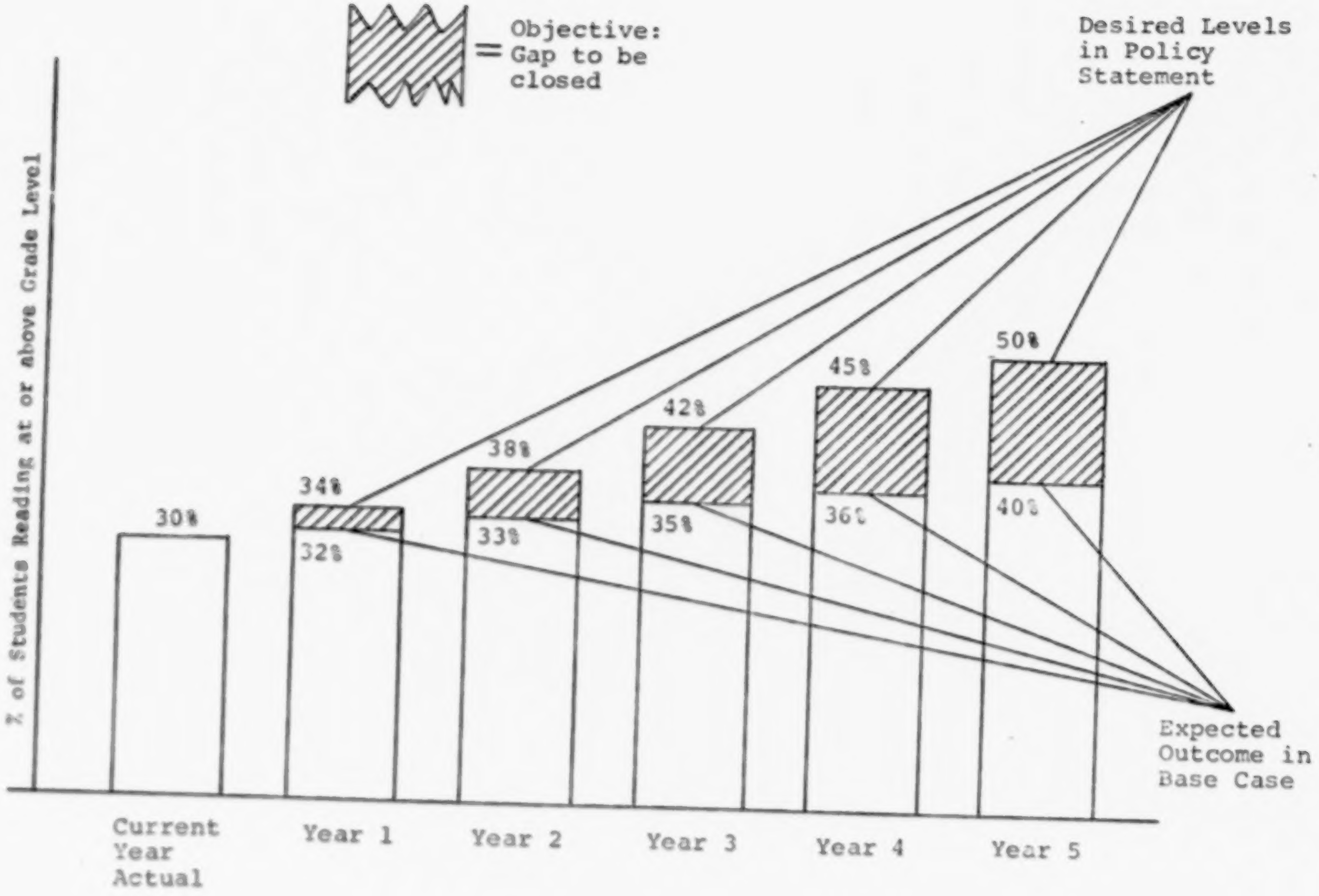


Chart II-5 Example of Indicator-Objective Relationship

Priorities

"Priority" is a measure of relative importance among the several objectives of the district. It can be expressed in at least three ways:

- a rough grouping of all objectives into high-, med-, or low-priority
- a ranking of all objectives from most to least important
- a specific weighting of the relative importance of each objective, or of the units in each scale (e.g. 1% decrease in "Drop-out" is twice as desirable as 1% increase in "Reading at or above grade level").

Statements of priorities should be more than rhetorical. They must be specific and quantified, so that they will influence the subsequent resource allocation decisions.

Constraints

There are two kinds of constraints - formal and informal. Formal constraints are upper or lower bounds on certain process variables, such as tax-rate increase, square feet of construction/yr., etc. Wherever possible these formal constraints should be specified in the policy report, prior to the evaluation of new plans.

Informal constraints are those loosely defined feelings about what is or is not feasible, mainly political limitations on possible courses of action. Planners often discover these constraints after plans have been developed; thus, an inventory of constraints develops over the years.

In general, while it is necessary to work within constraints, it is unwise to presume the infeasibility of certain proposals too readily. Politics is defined sometimes as the "art of the possible," but the effective politician makes his own possibilities, rather than yielding to traditional, unchallenged notions about what can or cannot be done.

Design of Project Alternatives

Many school districts undertaking strategic planning for the first time believe that the battle is won when goals are agreed upon. In fact, goal-setting is only mid-way through the complete planning process.

One of the essential notions of systems analysis, of which PPB is a special case, is that it is possible to design alternative means to any set of goals and select rationally that alternative most likely to be effective and economical.

In STEP, once objectives (Indicator gaps) are agreed upon, several project design groups are created (or selected from existing groups), most containing staff, community, student memberships, to write proposals for achieving the objectives.

Any proposed change in the operation of the school district is considered a "project;" projects may be additions to the district, deletions from the district (negative projects), or replacements (both a positive and negative proposal).

Project Proposals

STEP includes a project proposal activity, akin to (though less cumbersome than) the process of writing grant proposals. After the Board publicly announces its objectives (gaps that need to be closed), proposal development teams draft project designs. Project designs include the following elements. (See Chart II-6):

- Expected impact on all Indicators
- Proposed activities (including schedule)
- Estimated costs over time
- Rationale (research or investigation which supports the belief than this proposal will produce the desired results in the specified time.

Proposals must cover all costs, activities and outcomes for the five-year period - with "0" entries for years in which the project is not in effect.

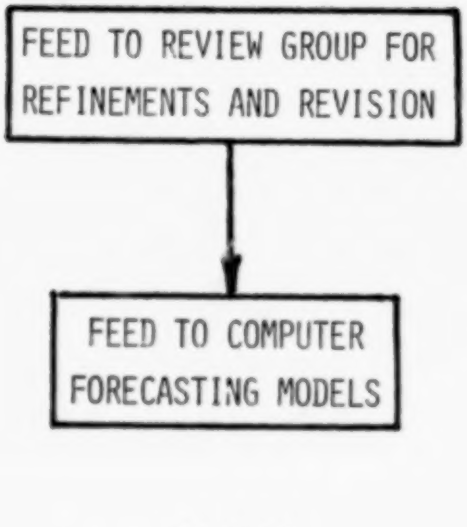
The developing of proposals is an important opportunity for community participation; it is quite important, however, that the project writing teams realize that not all proposals will be approved. For this reason, the project design requirements should be no more arduous than necessary.

CHART II-6

PROJECT DESIGN

ACTIVITY PACKAGES TO CLOSE INDICATOR GAPS

- ACTIVITIES
- REQUIRED RESOURCES
- EXPENDITURES
- "PLANNING FACTORS"
- EXPECTED IMPACT ON INDICATORS
- SUPPORTING ARGUMENTS


FEED TO REVIEW GROUP FOR REFINEMENTS AND REVISION
FEED TO COMPUTER FORECASTING MODELS

Review of Project Proposals

All proposals are submitted to a Review Group. This group, four or five professionals, review the competency of the proposals - but do not act on them. The concern of the review group is to make sure that the cost estimates are accurate and complete, that the estimated effects are reasonable, and that the rationale is credible. The review group may require re-writes of certain proposals.

Again, the group does not approve proposals; merely ensures that the estimates of costs and effects are believable enough for the next stages in the planning process.

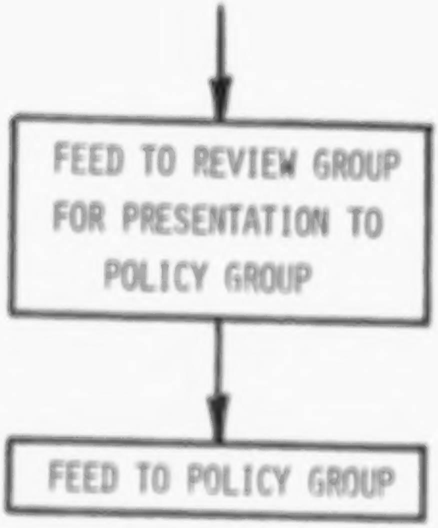
Re-iteration of Planning Model

Depending upon how many proposals are actually submitted, the planners next consider the implications of approving every possible combination of projects, or many possible combinations. Using the same planning models which converted assessment data to the "base case," project combinations are fed into the program and costs and outcomes are "added on" to the base case plan. (See Chart II-7) (In the case of negative projects, costs, and outcomes may be removed from the base case.) This stage of the process is a simulation of the consequences of approving alternative plans of action. Each combination of projects generates a plan with as much detail as the "base case," including gaps that remain to be closed and indications of revenue feasibility. Sometimes this activity is know as the "What if..." stage; it is the essence of planning.

CHART II-7

SIMULATION OF ALTERNATIVES

- "ALTERNATIVE CASE": COMBINATIONS OF PROJECTS
  - IMPACT ON INDICATORS
  - IMPACT ON EXPENDITURES
  - IMPACT ON REVENUE REQUIREMENTS



FEED TO REVIEW GROUP FOR PRESENTATION TO POLICY GROUP

FEED TO POLICY GROUP

Selection of "Best Case"

The task of the planners is, now, to judge which of the possible alternatives (including the "base case") is the "best" course of action.

STEP allows this selection to be based on quantified criteria of desirability - in terms of both costs *and* desired outcomes.

Cost-Utility Comparisons

Each alternative plan is characterized by a unique estimated cost and unique estimated set of outcomes. These outcomes are aggregated as a function of the priorities and size of remaining gaps associated with each alternate, so that each plan can be described as having a single utility and single cost. (This process can be done informally, or formally, through any of several benefit estimating procedures, depending upon the willingness of the planners to make specific statements of personal value and utility. (See Part III.6.)

Feasibility Evaluation

The best case, or recommended plan, is finally subject to feasibility review. This is a final check on a number of assumptions made earlier in the cycle. If, for some political, financial, or other reason the plan is unacceptable, the planners may return to their alternative cases and submit the "second best case" and so forth.

In practice it may be necessary to reiterate parts of the process, by running new project combinations through the planning model, or by writing new designs and adding them to the alternative possibilities. (See Chart II-8.) As a last recourse, if no feasible plan is found, the decision-makers may consider a revision of policies, that is, a lowering of expectations or a loosening of process requirements.

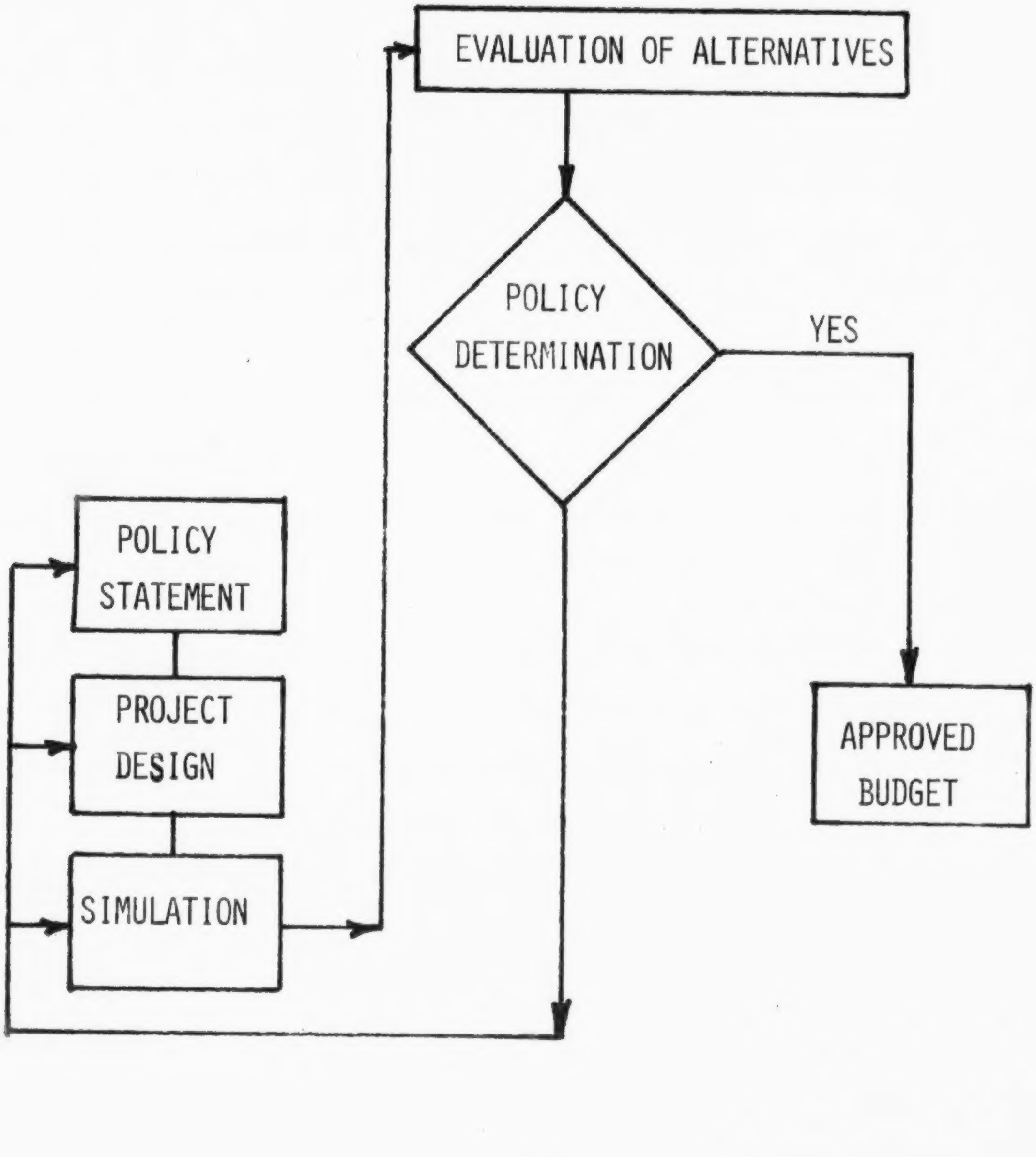
In STEP, each economic saving is associated with an identifiable loss of effectiveness of quality. Thus, costs are related to outcomes, a relationship which does not occur in typical school budget evaluations.

Generating Year 1 Budget

Approval of the multi-year plan, is, in effect, an approval of the operating budget proposal for the next year - even though the detailed budget has not yet been written. In strategic planning, the decision point is moved back to the pre-preparation stage, and the actual budget preparation flows almost automatically from the approved plan.

After a group of preferred projects has been selected for implementation, the entire results of the planning process must be translated into an operating budget for the next year. There are three general methods of doing this. In Method 1, the planning data are used intuitively by the budget makers to produce the next year's budget. This budget is then recross-walked into the program categories. The result of this budget cross-walk and the plan are compared. There may be differences, CHART II-8

DECISION AND RE-ITERATION


EVALUATION OF ALTERNATIVES
POLICY DETERMINATION
YES
POLICY STATEMENT
PROJECT DESIGN
SIMULATION
APPROVED BUDGET

since the budget preparation may have misinterpreted some of the planning implications. Adjustments are made to either the plan or the budget until the plan and budget are in agreement. The budget is then prepared. This method was first used with EPPBS.

Method 2, the one now recommended for use with EPPBS, depends upon the assumption than new projects can be planned at the level of detail of expenditure accounts. The procedure is to first prepare a one-year budget under the assumption that no new decisions are made, that is, no-change or continuation budget. The no-change budget is then cross-walked to estimate the first year's costs. Planning then proceeds as usual - producing the new projects, which are described at a detailed cost level. The project data for the first year can then be added to the no-change budget to obtain the total year one budget.

It is possible, with Method 3, to convert directly from a plan to a budget. However, this method requires some special data which are not handled by EPPBS. In order to accomplish this process, it would be necessary to carry the expenditure account data within each program and project category and within each budget category. If this is done, then the translation from the plan to the budget can be made directly. Since the data system required is complex, it will be some time before school districts can implement such a data system for the purpose of utilizing this method.

Whatever method is employed, it is imperative that all persons in a position to approve or reject the proposed operating budget have already seen and accepted the program-budget in the multi-year plan.

Evaluation - Monitoring

In addition to the district-wide assessment, the projects added onto the educational programs are evaluated and monitored in some detail, to see that activities occur as planned, and whether expected outcomes do occur.

Project Control

Projects are more easily managed and controlled then the general programs. Unlike the broad programs, projects are not guaranteed perpetual life in the district; they can be scrutinized, modified, or even eliminated much more easily than the basic programs.

The purpose of project evaluation and monitoring is to assist the district in achieving its objectives, not merely to find fault.

Changes in Management Control

Over several years of planning, a larger and larger proportion of the activities of the district will be in these carefully designed and monitored projects, and, consequently, the management control of the district will be enhanced. Projects generally have project directors, who, in turn, have management plans. Thus, the successes and failures of the district can be more accurately associated with specific staff members. This change will enhance the accountability of TPS to the community and enable the Board and Executives of the schools to better evaluate themselves and produce change and improvement.

And, further, the more projects are designed, installed, monitored, and evaluated, the better the planners and project design groups will become at devising and evaluating alternatives.

The Role of the Computer

Hopefully, by now, schoolmen are no longer apprehensive about electronic data processing. Most districts of any size already use computers for accounting, scheduling, or even guidance and instructional purposes.

The role of the computer in formal planning is simply that of a computational aid. The points at which computers enter the process are those when several thousand calculations need to be done. In theory, all the planning could be done manually - even the most complicated forecast - but it would make the process more expensive, time - consuming, and error-prone.

One thing must be made quite clear. STEP is not a computer system; the computer makes no decisions. Do not be misled by the use of the term "systems analysis" in connection with strategic planning. Systems analysis is a way of thinking about the design and improvement of systems. It is independent of computer applications, even though systems analysis is used to design computer systems and procedures, as well as other systems.

The Role of the Community

There is nothing, to prevent one man from doing all of a school district's strategic planning all alone, in complete privacy and secrecy. Except that he would be missing an opportunity to exploit one of the principal benefits of strategic planning in education - namely, involving the educational and general community in the planning process, thereby improving everyone's understanding of the decisions and broadening the base of public support. The program-budget format itself enhances the communication between the district and the local government and community. The single greatest complaint of rebelling taxpayers is that they do not see what they are getting for their money, and the program budget address this problem head-on.

We cannot say, with any scientific certainty that STEP will quell taxpayers' resistance or increase the chances for success in financial elections. In part, we are limited in knowing this result because most of the districts embarked on other planning system projects have only begun, and have not yet developed the full planning or communication value of the approach. Even so, several educators have written that PPBS has helped them to get budgets approved, and many more are confident that it will.

Logically, a formal plan, showing the taxpayer what he gets for his money, and why that particular level of spending was chosen, ought to satisfy the taxpayer's requirements. Of course, he may still vote "no" but for better reasons than before. Unless a community does not value the goals pursued by its school district, there is no reason why program-budgets would not increase a voter's willingness to vote "yes."

Activities and Responsibilities in the Annual Cycle

In this section, the major clusters of activities describe above are disaggregated into more detail. The activities are arranged in linear sequence rather than a precedence network. For each activity, the appropriate procedures from Part III of this manual are cited, the persons or groups responsible are indicated, and the approximate time of year is indicated. Note that these times assume a cycle which runs from May, Current Year - 1 (CY-1), through January of Current Year (CY), the time at which budget proposals for Year 1 (Y1) are ordinarily transmitted for approval. This schedule is the expected timing, once the users of the system have become familiar which it and solved first-time data problems; in the first year or two, the cycle will probably require closer to a full year.

Responsibilities for the operation of STEP are assigned to the following persons and units in the public schools:

1. Planning Director - the manager of the STEP systems, and supervisor of all planning activities.

2. Analysts - technical support personnel, responsible for data management and processing.

3. Policy Group - a group comprised of a few senior administrators and the Board of Education.

4. Management Group - building administrators, project and program directors, middle-level administration, etc.

5. Review Group - a panel of 3-5 senior educators, responsible for performance estimates and review of project designs.

6. Educational Community - the entire professional staff of the Trenton Public Schools, represented by a small group of elected persons.

7. Advisory Group - a panel of community and educational agency representatives, previously know as the Technical Task Force.

8. General Public - the community at large, represented through surveys or the Superintendent's Citizens Advisory Group; includes Secondary students.

9. Project Design Teams - groups formed of members of the educational and general communities, to author project proposals.

TASK AND RESPONSIBILITIES

	Task	Procedures ID	Responsibility	Time
1.	Collect Enrollment Forecast Input Data	III.2	Analysts, Management Group	May, CY-1
2.	Prepare Enrollment Data for program, and run Enrollment Report	III.2	Analysts	June, CY-1
3.	Collect Enrollment output for census report	III.2	Analysts	June, CY-1
4.	Collect Census Data	III.2	Analysts	June, CY-1
5.	Prepare Census Data, and run multi-year enrollment forecast	III.2	Analysts	June-July CY
6.	Collect Planning Unit Data	III.3	Director, Analysts, Management Group, Educational Community	June-July CY
7.	Collect District Factor Data (inflation, fringes, turnover)	III.3	Director, Analysts, Management Group, Educational Community	June-July CY
8.	Prepare Planning Unit Data and District Factor Data, and run Cost/Resource Requirements Forecast	III.3	Analysts	July-Aug. CY
9.	Collect Tax Base Data	III.4	Director, Analysts	July, CY
10.	Prepare Tax Base Data, run tax base forecast	III.4	Analysts	July, CY

TASK AND RESPONSIBILITIES (cont'd)

	Task	Procedures ID	Responsibilty	Time
11.	Collect Revenue Source Data	III.4	Director, Analysts, Management group	July-Aug. CY
12.	Prepare Cost Output, Tax Base Forecast, and Revenue Source Data, run multi-year Revenue Forecast	III.4	Analysts	August, CY
13.	Collect CY-1 Indicator Data	III.1, III.6	Director, Analysts, Management Group	April-July CY
14.	Prepare Indicator Forecast	III.1, App. A	Director, Review Group	September, CY
15.	Assemble Base Case Plan	-----	Director	September, CY
16.	Review Base Case	III.1	Director, Policy Group, Analysts	September, CY
17.	Re-run Base Case, as needed	-----	Analysts	Sept.-Oct. CY
18.	Review Base Case	II.1	Director Policy Group Educational Community, General Community	Sept.-Oct. CY
19.	Issue and Disseminate Policy Memo	III.1, III.5	Policy Group, Management Group	October CY
20.	Form Project Design Teams	III.5	All groups, Director	Oct.-Nov. CY
21.	Develop Project Designs	III.5	Project Design Teams	November, CY
22.	Review, Revise Designs	III.5	Director, Review Group, Project Design Teams	Nov-Dec. CY

TASK AND RESPONSIBILITIES (cont'd)

	Task	Procedures ID	Responsibility	Time
23.	Specify Alternative Sets	III.6	Director, Policy Group	December, CY
24.	Prepare alternative data for simulation runs, run simulations	III.6	Analysts	December, CY
25.	Transmit Alternative Plans to Policy Group	-----	Director, Analysts	December, CY
26.	Use cost-utility model to evaluate alternatives	III.6	Policy Group, Director, Analysts	Dec.-Jan. CY
27.	Select Approved Plan	III.6	Policy Group	Dec.-Jan. CY
28.	Generate Y1 Budget	-----	Policy Group, Director, Management Group, Analysts	Dec.-Jan. CY
29.	Re-iterate Steps 20-28, if needed to find acceptable plan/budget	III.6	Policy Group, Director, Analysts, Design Teams	Jan.-Feb. CY

III.1 GOAL-SETTING PROCEDURES

GOAL SETTING MODEL

Introduction

Goals, objectives, and priorities are at the heart of any strategic planning system. It may be said that, in the absence of comprehensible statements of purpose, there can be no effective planning, resource allocation, or program evaluation. In STEP, goal-setting and reporting is a manual procedure -- that is, it does not employ computer technology directly, even though some of the data used in forming goals is generated by the several computer programs in the system.

A major effort during the development of STEP has been the formation of the first set of goals, or, more correctly, the Indicators that will be used to express the first set of goals. A description of the procedure used follows below.

Definitions

While almost every school district in America has some district-wide goals, virtually no district has goals which are appropriate for rational planning and decision-making; this problem is in part attributable to confusing definitions of the terms "goal" and "objective". There is little agreement on the meaning of these terms, and management scientists and educational theorists often contradict each other on whether it is "goals" or "objectives" that are supposed to be measurable.

In STEP, both goals and objectives are measurable. A goal is defined as a statement of intention to change some variable in a specific direction to a desired level; an objective is defined as the specific magnitude of change that is required to close the gap between the anticipated level and desired level. To illustrate, suppose that the planners estimate that by 1975, 55% of Trenton's High School graduates will be accepted to college; the policy makers might set as a *goal* raising the desired level to 65%, and thus, the district's objective is to close the gap between 55% and 65% by 1975.

The reason for this kind of specificity is that goals and objectives will be used to make resource allocation decisions. If, for example, it was decided to enhance or modify those programs that affect college placement rate, it would be extremely important to know whether the objective (the gap to be closed) were 5% or 10%. It is unreasonable to expect the same application of resources to produce both ends, and it would be almost as unreasonable to develop programs that would exceed the desired level when money is scarce (as it always is) and when other objectives need to be met.

Thus, the policy-makers in a district which uses PPBS will be required to state goals and objectives in measurable, specific terms, to state desired levels and deadlines. They will also - as will be described later - be obliged to state priorities in equally specific terms.

To facilitate the stating (or revising) of goals and objectives, the STEP system employs Indicators of Quality. Indicators are scales - averages, ratios, proportions - that measure the success or failure of the district in achieving its goals. The set of approved Indicators is the barometer of educational effectiveness; it is used to assess current levels of effectiveness, forecast future levels of effectiveness, state desired levels (goals), or objectives (gaps between anticipated and desired levels). In strategic planning, Indicators describe the product or output of the organization; in computing the cost-benefit of a given plan, the sum of weighted changes on Indicator scales equals the expected benefit of the plan.

The problem, therefore, of estimating goals and objectives for the first time is a two-phase problem:

Phase I - Selecting the Indicators of Quality that will be used in the district

Phase II - Setting desired levels (goals) on those Indicators.

Goal-Setting Model

The Phase I objective - to develop the Indicator list that will be used - has been a major concern of Year 1 of the project. There are, of course, no "right" or "wrong" Indicators; it is within the policy-makers' power to choose them (and thereby exclude all others); nor is there a shortage of candidate

Indicators, because hundreds could be generated easily. The research activity in Year 1 has generated data which will inform the Board of those Indicators that seem to matter most to the Trenton general community - and special sectors of it - so that the choice of Indicators (a policy prerogative) will be influenced by detailed data about community opinion.

The logic of this process is explained in the attached conceptualization of the goal-setting process (Chart III.1-1.) The steps in the process are described below:

1) Establish School-Community Advisory Group

A group comprised of representatives of Trenton Community Agencies, Trenton Educators, and professional planning scientists was formed (the project's Technical Task Force); the mission of this group was to evaluate alternative technical approaches - including the goal-setting procedure - and communicate its judgements to the consultant contractor.

2) Generate Extended List of School Descriptors

A sub-committee of the Technical Task Force generated a list of approximately fifty descriptors of the school district's program, that is, aspects of the schools that the parents and general community would probably have opinions about. This list was revised and refined into 36 descriptors, which would serve as the basis of the community opinion study.

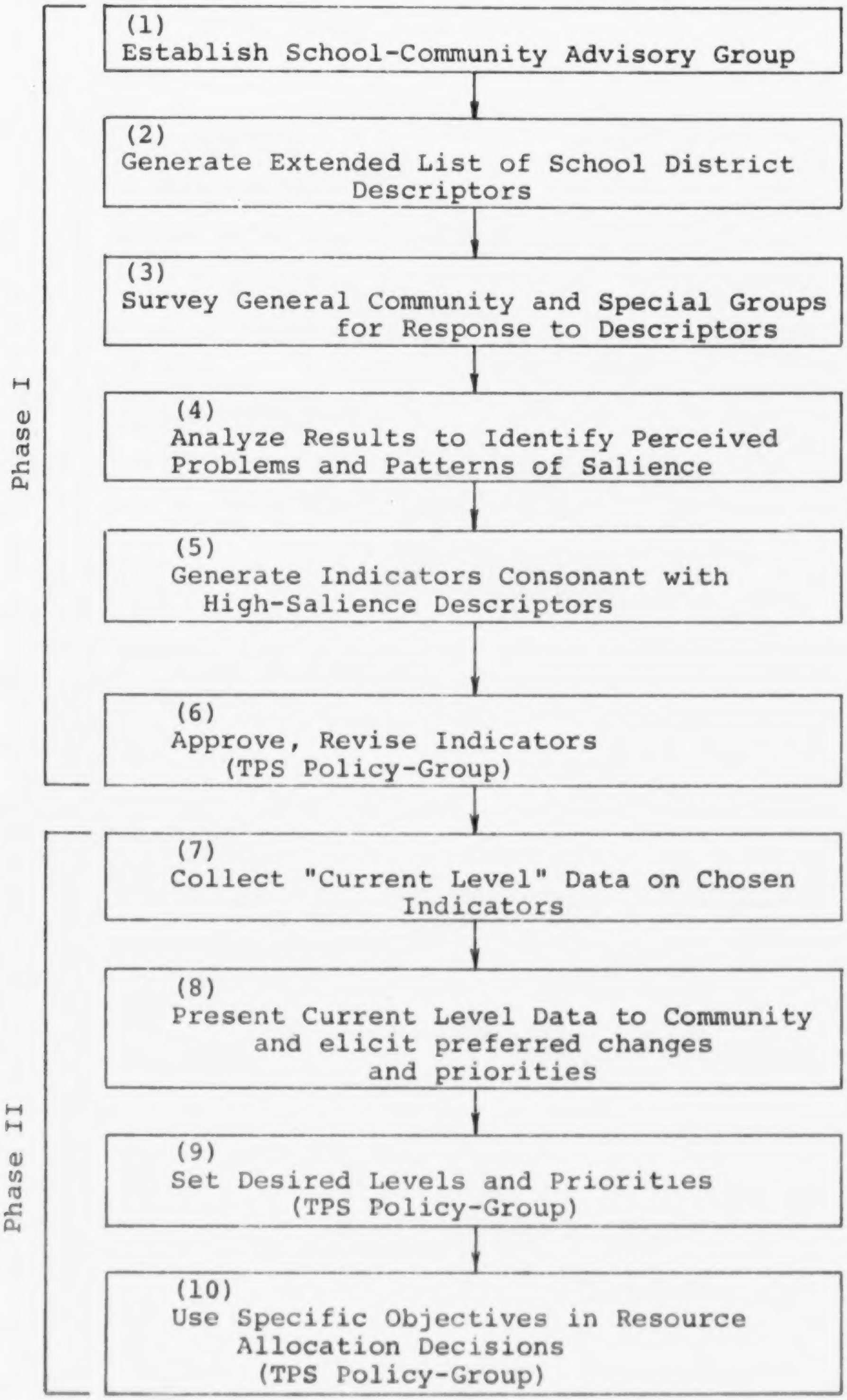

Phase I
(1) Establish School-Community Advisory Group
(2) Generate Extended List of School District Descriptors
(3) Survey General Community and Special Groups for Response to Descriptors
(4) Analyze Results to Identify Perceived Problems and Patterns of Salience
(5) Generate Indicators Consonant with High-Salience Descriptors
(6) Approve, Revise Indicators (TPS Policy-Group)
Phase II
(7) Collect "Current Level" Data on Chosen Indicators
(8) Present Current Level Data to Community and elicit preferred changes and priorities
(9) Set Desired Levels and Priorities (TPS Policy-Group)
(10) Use Specific Objectives in Resource Allocation Decisions (TPS Policy-Group)

FIGURE III.1-1

Conceptualization of STEP Goal-Setting Model

3) Survey General Community and Special Groups, etc.
The consultant contractor, working with members of the task force, developed a community opinionnaire form; two committee members, United Progress, Inc., and Trenton Model Cities, translated and distributed a Spanish-language version of the form. The form was printed in Trenton's two daily newspapers, and a copy was sent home with every school child. The teaching staff of Trenton was also given an opportunity to respond.

4) Analyze Results, etc.
Government Studies and Systems then computed the results and analyzed the data; the focus of the analysis was on those descriptors which elicited the strongest positive and negative opinions from the respondents, and those which elicited the highest percentage of any response at all. Analyses were performed for the entire population and for many socio-economic sub-populations within the sample.

5) Generate Indicators, etc.
From the analysis of the data, candidate Indicators are extracted and forwarded to Trenton Public Schools' Policy-Makers.

6) Approve, Revise Indicators, etc.

In the beginning of Year 2, the Board and Executive administrators revise, modify, or approve the candidate Indicators.

7) Collect "Current Level" Data, etc.

Given the approved set of Indicators, the Trenton Office of Planning, Research, and Evaluation collects "current level" data, thereby profiling the existing quality of the district in terms of those measures judged most meaningful to the community, staff, and Board of Education.

8) Present Current Level Data to Community, etc.

The profile data will be disseminated in a second community opinion survey (or other opinion-collecting process) and respondents will indicate the desired magnitude of change on the various Indicators and on the priorities.

9) Set Desired Levels, etc.

Given this report on current levels and community preferences, the Trenton Policy-Making group will issue a Policy Memorandum expressing the desired levels which will serve as district-wide goals, the time deadlines, and the priority weightings of the various goals.

10) Use Specific Objectives, etc.

This policy memorandum will be used to generate project designs and develop alternative plans in the STEP System.

ANNUAL REVISIONS

The proposed goal-setting model, it should be noted, is the model for first-time goals; this two-year program of research will not need to be repeated once the first policy memorandum is issued.

Each year, the Policy-Makers will issue a new policy memorandum - but only changes in the previously approved plan's objectives will be repeated. How shall these changes be decided?

The two important influences on the annual goal-setting process are, first, the "base case" forecast, in which the multi-year implications of the currently approved plan are projected, and, second, the annual community input, which, ideally, should take the form of a scientifically designed survey, but can also be done less formally.

Thus, while the STEP system requires multi-year objectives, it allows for annual revision of goals and plans, thereby enhancing its responsiveness and flexibility.

The process of annual goal revision is conceptualized in Chart III.1-2. Note that this process occurs in the on-going system, and the Policy-Makers will already have a strategic plan from the previous year. If the forecasts developed in the earlier plan have proved accurate, and the desired levels have not changed, the Policy-Makers may elect to re-approve last year's plan, which means that a new "fifth year" will be added to it.

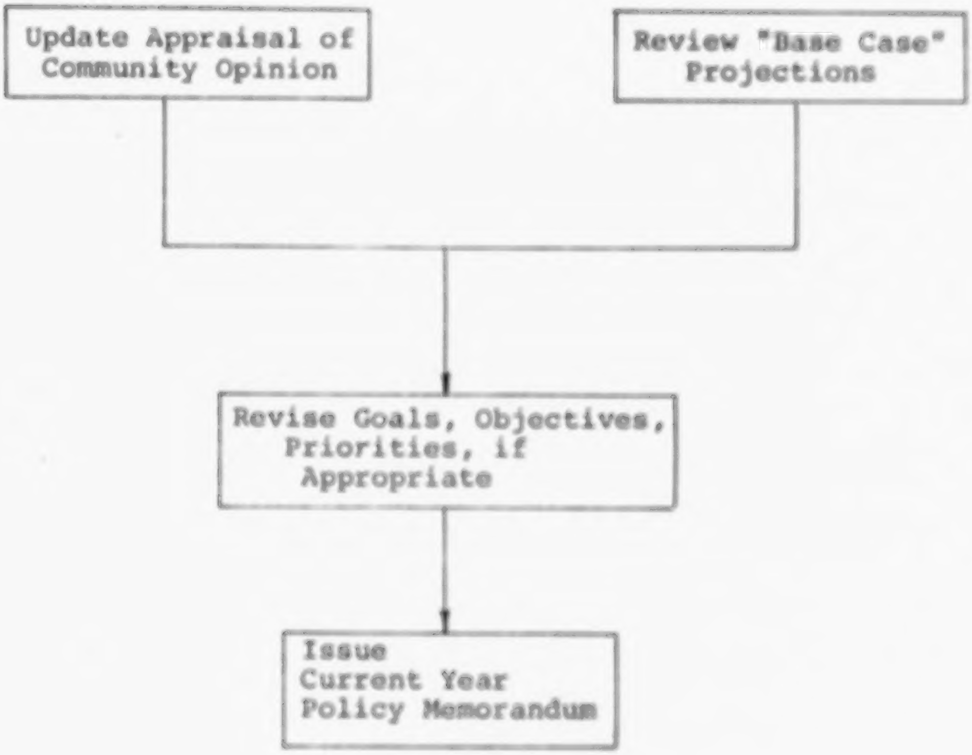

Update Appraisal of Community Opinion
Review "Base Case" Projections
Revise Goals, Objectives, Priorities, if Appropriate
Issue Current Year Policy Memorandum

CHART III.1-2

REVISING GOALS

Priorities

"Priorities" is an overworked term in administrative discourse, but in STEP it has a limited and significant meaning.

Priority-judgments are reflected in the specific weighting of the several school district objectives. These judgments are expressed quantitatively in one of two forms:

a. Weak form - the various objectives of the district (gaps to be closed) are ranked from most important to least important, and are roughly divided into High, Middle, and Low Priority.

b. Strong form - the units of change on the various Indicators, or the total gap in the objective, are given specific relative weightings; for instance, the policy makers decide how many units of value - "utiles" - will be associated with a "1% decrease in drop-out rate;" or a "1% increase in the number of students reading above grade level" (if those are two of the Indicators), or two of the objectives, such as "1% decrease in drop-out rate" or "10% increase in students reading above grade level" are assigned relative importance.

The mathematical weights associated with the strong form (a form that will eventually be realized in STEP) are used to adjust the effect predictions of the various plans, so that a single estimate of expected benefit can be assigned to each alternative plan that is being considered.

Thus, "priority" becomes more than a word in discussing plans; it becomes a formal expression of the values and philosophy of the policy-makers (influenced by outside opinions), which, in turn, becomes mathematically binding upon plan selection and resource allocation decisions.

The proposed goal-setting model in no way abridges the policy prerogatives of the Board and executive administrators; it does, in contrast, provide a framework for expressing the prevailing educational philosophy and values of TPS decision-makers in a specific, workable format, so that discussions of goals will be less rhetorical and more action-oriented; it also provides a rational framework for making the "go/no-go" decisions that are necessary in the scarce economy of the district.

The proposed approach also ensures community participation in the goal-setting process, and thus enhances the community's stake in the district's plans. The Policy-Makers should be cautioned, however, that failure to incorporate the preferences of the persons consulted may have a negative effect on school-community relations.

This approach addresses both responsiveness and effectiveness. The full range of advantages cannot be appreciated until the people who will use these procedures have "hands-on" experience in framing policy memoranda.

CURRENT STEP INDICATORS

Introduction

Using the procedure described above, the Trenton Public Schools Administration, on the basis of community survey data, in consultation with the Board of Education, has developed a first list of Indicators, most of which may be regarded clearly as "outputs," others as interesting process characteristics. The Indicator Scales, in their current form are grouped into the following categories:

Student Performance
Student Characteristics
School-Community Interface
District Characteristics

The Indicators are discussed below. For each Indicator there is an identification and comments on its measurement and meaning.

Indicators: 1972 Version

Student Performance

1. Distance from Grade on Standardized Test of Reading/Language Arts Competence.

This Indicator reflects the difference between the mean grade equivalent score for the entire student body, or subset of the student body, and the appropriate grade equivalence.

Current estimates indicate that the 1-6 student population is about 1.25 years below grade, and the 7-12 population is at least 2 years below expected levels. This data, at present, is highly problematical; currently, reading performance is assessed with a wide variety of instruments, many of which are of suspect reliability for the population tested; many students are over-tested, causing interference in the accuracy of their scores. GSS recommends that the district develop an integrated, properly administered reading test program, and that it consider development of a TFS battery based on emerging curriculum objectives (that is, criterion-referenced).

2. Distance from Grade on Standardized Test of Math/Science Competence

Comments made on Indicator 1, apply to Indicator 2 as well.

3. Percentage of Students Entering First Grade with Acceptable Reading Readiness

This Indicator focuses on the Early Childhood instructional program, unlike most other Indicators which refer to overall district characteristics. Current estimates indicate that about 75% of the student satisfy the criterion, but this data should be augmented with a more systematic testing program, administered at the beginning of first grade, rather than at the end of pre-school. (The test may be used at other times for diagnostic or other uses, but as a source of Indicator data it should be administered in the first grade.)

4. Drop-Out Rate

Current estimates of drop-out for the 10-12 population vary from 15 - 20%. Also, current data does not reflect many students who "disappear" between 9th and 10th grade, as well as counting two or three times students who go in and out of high school. To collect drop-out data, as well as data on all other student-related indicators the TPS should implement as quickly as possible a student numbering system which will allow the district's research and evaluation staff to monitor the progress of students through the grades, and calculate each year the number of students retained, transferred, dropping out, or returning to the district.

5. Percentage of Students Graduating with Salable Vocational Skill

Each student about to graduate from TPS should be interviewed or tested to ascertain whether, if he were to pursue no further education, he is competent to find work within a few months of graduation; the fact that a student has completed a commercial or occupational program does not in itself mean that he has a salable skill. The student's post high school aspirations should also be recorded at that time, after he or she has consulted with a guidance counselor.

6. Percentages of Graduates Fulfilling Post High School Aspirations

TPS should implement a regular follow-up of graduates, at one, three, and five-year intervals to assess performance after high school. Current high school follow-up procedures employed in New Jersey - the "postcard" approach -- are inadequate for obvious reasons. The district need not survey all graduates, but may sample a portion of them -- according to a representative sampling plan -- and relate data to the Post High School Aspirations record before graduation. A student may be said to have met, failed to meet, or exceeded those aspirations. Indicator 6 records the percentage that have met or exceeded expectations.

Student Body Characteristics

7. Average Daily Attendance

The average daily attendance for each year will be computed from existing data resources. Some care must be taken, however, to improve the reliability of absence reporting in the High School, where attendance analysis is more complex.

8. Percentage of Students in Sub-standard or Deteriorating Facilities

Sub-standard facilities may refer to the technical classification scheme used by the State Department of Education, or a local set of standards for acceptable facilities may be developed. Annually the district must assess the proportion of its students who attend school in classrooms or buildings which are unsafe, unhealthy, esthetically offensive, or inadequate for proper instruction.

9. Disruption Index

The disruption index is an aggregate of data on discipline referrals, suspensions, and expulsions. The index is calculated by computing the mean incidence per month of each type of occurrence; the discipline referral number is multiplied by 1, the suspensions by 2, and the expulsions by 3. The total is the disruption index.

[Mean Disc. Referrals/mo. + (2) Mean Suspensions/mo. + (3) Expulsions/mo. = DI]

10. Incidence/Month of Disruptions Involving Students of Different Races

To collect this data, all TPS employees will be required to note such instances and report them monthly. For Indicator purposes, student names and description of the incident is unnecessary.

11. Incidence/Month of Harm or Damage Done to Students Due to Delinquent Or Criminal Behavior

Cases of assault, theft, etc., in which a local or state law is violated.

12. Percentage of Time Spent by Typical Student in School-supervised Physical Education or Recreation

This data should be assessed by a periodic sampling of student time utilization, for an appropriately designed sample of students. The result should be a "profile" of time utilization for students as a whole, and selected subsets of the whole.

School-Community Interface

13. Percentage of Eligible Citizens in Trenton participating in Adult and Continuing Education

Every three-five years an assessment is made of the number of persons eligible for the various educational activities for drop outs and adults; the percentage of that total enrolled in any year, is the Indicator value for that year.

14. Percentage of Citizens in Trenton Knowing Certain Facts About the TPS

Each year, the Office of Research, Planning, and Evaluation will develop a questionnaire including questions that adults in the community should be expected to answer. A small, appropriately designed sample will be used to determine the extent of community knowledge in Trenton.

15. Percentage of Positions in TPS Held by Community Members

The ratio of TPS jobs held by members of the community to total positions in the school district.

District Characteristics

16. Ratio of Classroom Teachers in Service to Average Daily Attendance

Teachers on leave or sabbatical are not counted, but substitutes are; average attendance is a more meaningful base than enrollment.

17. Books per Student in Library Holdings

18. Percentage of Teachers in Service with Less than Full Certification

This percentage should include full-time substitutes, and part-time substitutes equated to full time equivalents (unless the substitutes are certified).

19. Percentage of Teachers in Service with M.A. or Better

The district may use 30 Graduate Hours as equivalent to the MA.

20. Expenditure per Student

For total unweighted enrollment; for weighted enrollment; for each instructional program (7).

FUNCTIONS OF INDICATORS

Assessing District Performance

The most direct use of the Indicator scales (those described or others which may be added) is to develop a profile of the school district on those dimensions most interesting to the community and staff. Indicators are the basis for the performance profile, the index of school district output, whereas reports from the other modules of the system may be regarded as demand forecasts (enrollment), resource requirements forecast, and revenue feasibility forecasts.

Several current administrative functions are supported by the Indicator data, including reports to the community, assessment data for the state, and "needs" analysis for developing proposals.

Needs Analysis

In STEP, "need" is a condition in which the current or expected level of performance on an Indicator is different from the desired or acceptable level. A goal is a desired level on an Indicator, and a need is any condition other than achieving the desired level. The importance or gravity of a "need" is function of, a) the size of the gap between expected and desired levels, and b) the priority or weight of the units on that scale.

Base Case Projection

Indicator scales are the basis of the Performance forecast in the "base case" plan. Starting with current year performance data (actually CY-1 data), the Review Group estimates the Year 1 - Year 5 performance of the district, assuming no change in policies or programs. This forecast is performed using any group dynamic consensus technique judged appropriate. The Delphi Technique, as it may be applied to this process, in described in the Appendix of this manual.

Alternative Case Projections

Starting with the performance forecast in the base case, the Review Group adds (or subtracts) estimated changes in performance as a function of project designs. Each design includes an estimate of the project's impact on the district's Indicators. The Review Group first confirms or revises these estimates, and then identifies the aggregate effects of various project combinations. That is, the Review Group judges whether the combined effects of two or more projects should be simply added, or whether some other estimate is more reasonable; again, Delphi may be used for this purpose.

INDICATOR REPORTS

Annual Performance Profile

Each year the planning staff develops a profile report on district Indicator performance, based on May-June assessment data from CY-1. The information, at the discretion of the users, must be presented for at least the district as a whole, but also may be aggregated on a Program or Site basis.

Indicator Reference Projection

The five year performance forecast on the Indicators, assuming no change in district policies or plans, is developed by the Review Group and incorporated into the Base Case Report.

Annual Policy Memo

The senior policy makers in the district develop the annual policy memo from the Base Case plan. In it are shown the expected levels on Indicators, the desired levels in each of the five years, the gaps to be closed, and the priorities among the various gaps.

Alternative Case Indicator Projections

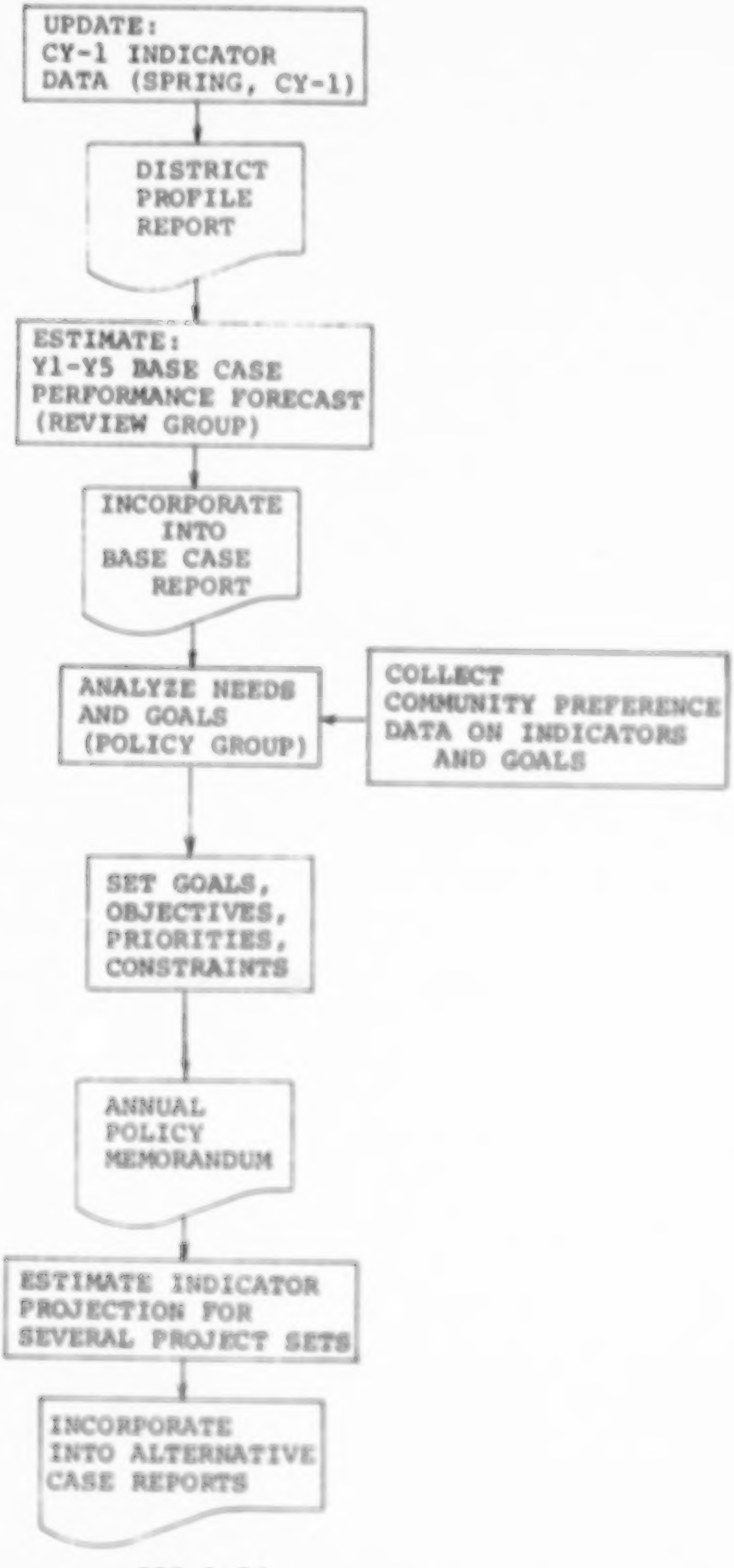
For each set of projects defined as an alternative plan, the Review Group estimates an alternative Indicator forecast. This analysis is incorporated into the Alternative Case Plan.

Flow of Indicator Information

Chart III.1-3 shows the flow of data collection, analysis, and reports associated with the school district's Indicators.

CHART III.1-3

FLOW OF INDICATOR INFORMATION


UPDATE:
CY-1 INDICATOR
DATA (SPRING, CY-1)
DISTRICT
PROFILE
REPORT
ESTIMATE:
Y1-Y5 BASE CASE
PERFORMANCE FORECAST
(REVIEW GROUP)
INCORPORATE
INTO
BASE CASE
REPORT
ANALYZE NEEDS
AND GOALS
(POLICY GROUP)
COLLECT
COMMUNITY PREFERENCE
DATA ON INDICATORS
AND GOALS
SET GOALS,
OBJECTIVES,
PRIORITIES,
CONSTRAINTS
ANNUAL
POLICY
MEMORANDUM
ESTIMATE INDICATOR
PROJECTION FOR
SEVERAL PROJECT SETS
INCORPORATE
INTO ALTERNATIVE
CASE REPORTS

III.2 ENROLLMENT FORECASTING MODULE

INTRODUCTION AND CONCEPTUAL DESIGN

FUNCTIONS OF THE MODULE

In STEP, the environmental demands upon the school district are analyzed in the enrollment forecasting procedure. The output of the procedure is a five year projection of annual school enrollment, by ethnic group, by school, by grade level, and by instructional program. This data, in itself, is useful to program planners and managers, since it provides information traditionally required to anticipate staff and facilities needs. Because, however, total enrollment in the district is not likely to change dramatically in the next several years, the model produces more detailed information about the ethnic groupings of students, which are frequently related to curriculum planning, particularly where Spanish-American students are concerned.

In addition to these intrinsic uses of the enrollment forecaster, the information is also necessary to drive the cost/resource requirements forecaster of the system. That is, many of the costs and other resources in the system vary as a function of numbers and types of students. In addition, the current state revenue calculation is built on enrollment estimates, so that multi-year enrollment projects are useful in generating multi-year revenue forecasts as well. This procedure also projects AFDC population in the district, which is also related to subsidies and several grant programs.

Design

The enrollment calculation procedure is based on the relationship between community population and public school population, rather than on retention ratios typically used in enrollment forecasts. In Trenton, the most sensitive enrollment-influencing variables are patterns of in and out-migration, as well as a high rate of mobility within the community itself. Population changes in Trenton are not as much a function of housing development as they would be in suburban or expanding communities; there are not simple growth rates for the number of dwellings or new housing starts. Instead, historical data shows slight increases in school age population associated with a stable or slightly diminishing number of housing units. Moreover, as a characteristic of older communities, there is an appreciable shift in the distribution of students from the lower to higher grades, causing problematical demands on existing school resources. For these reasons, and others, OSS believes that the approach employed will be generally applicable to urban communities in New Jersey and elsewhere.

Enrollments, thus, are calculated as a function of aggregate population, ethnic population mixes, and location of the population in the census tracts of the community. The first routine in the program is the forecasting of the white, non-white, and total populations of the community, using time-trending ratios derived from historical census data in the community; to this is input an estimate of the current Spanish surnamed population, based on information provided from community and government organizations.

After this aggregate, a five-year population forecast, by ethnicity, by census tract is completed, then the total current enrollment of the district is calculated, across schools, grades, and ethnic groups, on the basis of current actual data. The ratio between public school enrollment and general population in the current year is used as a planning factor for developing the five-year public school population, by grade, by ethnic group, by census tract. Data from census tracts is automatically "crosswalked" by a computer program into school service boundaries, and the appropriate proportion of school children from each tract is assigned to the opposite school and program. (This feature of the model also allows, therefore, simulation of the effects of alternative school service boundaries.)

At present, the forecaster provides detailed enrollment projects for each sub-program in the Early Childhood, Primary, Elementary, and Intermediate instructional programs; at the Secondary level, however, it currently provides a distribution of students in Vocational and Non-Vocational program areas, based on an extrapolation of current parametric relationships; similarly, the enrollment in Adult and Continuing Education, and Special Education, are forecast by extrapolating the current ratio of enrollments in those programs to community population, and extrapolating based on changes in overall population.

It should be understood by users of the enrollment forecasting procedure that it does not necessarily provide highly precise projections; it is not a "crystal ball," and will not entirely replace expert, experienced judgment on enrollment matters. Its function is to define an accurate estimate, based on a number of explicit assumptions by the users. Indeed, alternate enrollment projects can be generated by changing those assumptions. In addition, it is expected that users will, from time to time, override the output of the forecast when other information, not represented in the model, becomes available. Users should note that the enrollment forecast is the extrapolation of existing trends and that these trends may change. In fact, a main use of the forecaster will be the analysis of changing trends which will dictate different assumptions to the users.

Milestones in Using the Procedure

Developing multi-year enrollment projections requires the user to go through several stages of preparation and execution. These are summarized below:

> *Study of the General Model and Approach* - Users should study the manual, to become familiar with the logic of the model, the assumptions on which it is based, the options available to the user, and the reports that are produced.
>
> *Study of the Data Requirements* - users should know the requisite "inputs" to the model, know which facts must be gathered, what sources of information and judgment to consult, and what decision options may be employed in organizing or stipulating the inputs.

Data Preparation - All required inputs should be known, sources and forms of data required, completion of forms in appropriate formats, etc.

Keypunching - Conversion of input preparation forms to punched cards, according to instructions in the manual.

Arrangement of Card Deck - preparing JCL cards (job control language) arranging the Enrollment Module card deck in the correct order, and running the job at a computer facility.

Review of Output Reports - Analysis of reports by planning analysts and other users to interpret outcomes, identify problems, and, if necessary, prepare data and cards for re-runs.

Final Approval and Override - Determination of planning analyst of disposition of output, including manual overrides if judged appropriate; extraction of data which will be used as input to other modules in the system.

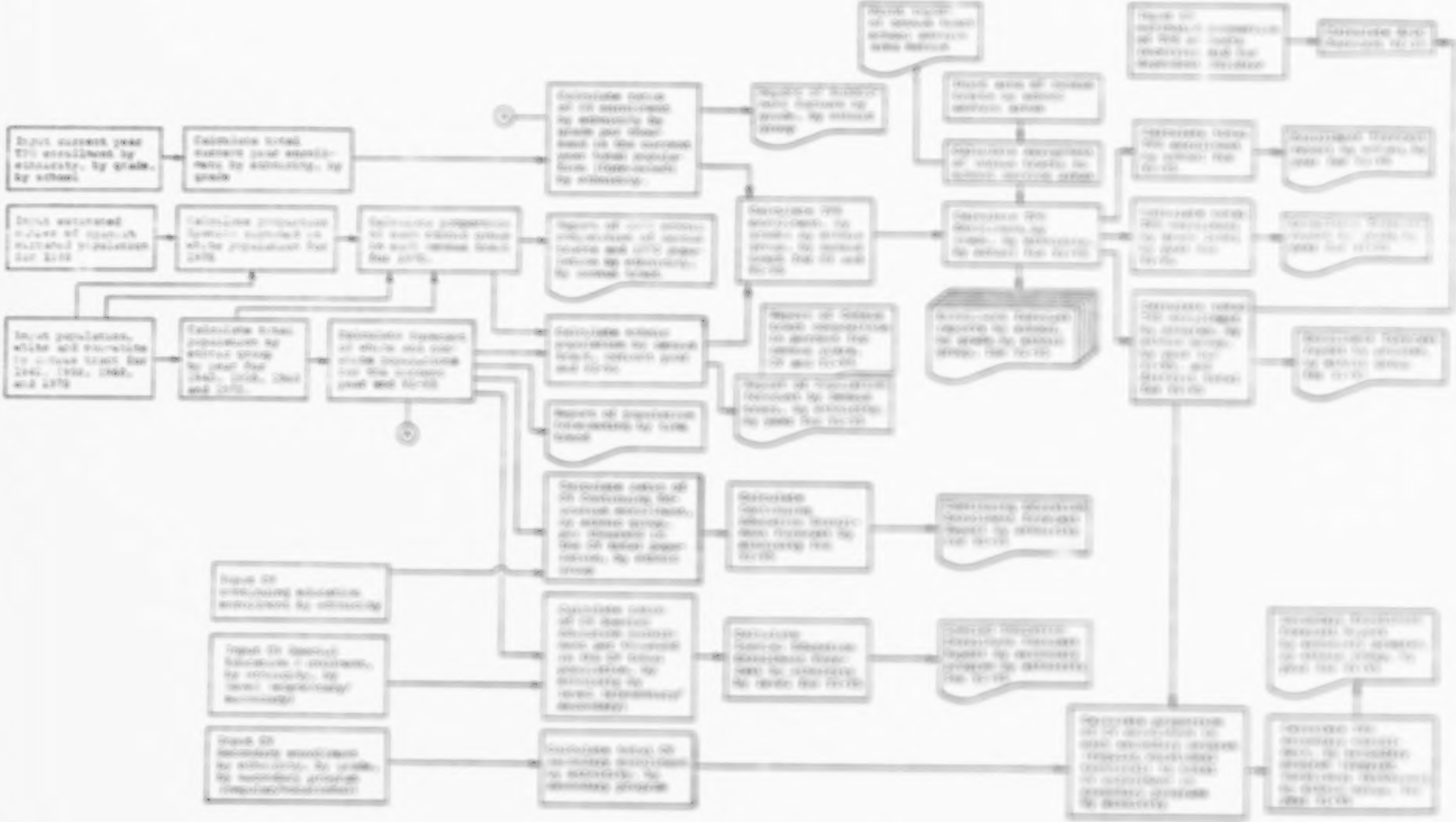
These major activities must be executed in the order above; failure to complete any of them will either prevent the procedure from operating, or reduce the quality of the resulting reports. In general, each of the automated procedures in this manual requires this sequence of activities of the users.

Conceptual Model

Chart III.2-1 shows, at a summary level, the flow of information and computation in the enrollment forecasting procedure. A more detailed definition of the inputs and output reports, as well as a listing of the computer program, follow in this section.

Chart III.2-1

Conceptual Flow, [illegible] Enrollment Module



ENROLLMENT MODULE USER PROCEDURES

DATA REQUIREMENTS

1. Data elements input to the Enrollment Module computer program can be grouped into two classes: data variables and computer program permanent data requirements. In the former category are current year and historical population and enrollment data. These data are collected from existing data sources, such as U.S. Census reports and school records.

   The second category includes data used both to control some aspect of internal computer processing and to format output reports. Examples which fall into this latter group are run control data, such as the number of census tracts, the number of schools in the public school system, etc., school titles, year and grade titles, etc. Run control data requires that the analyst be knowledgeable about the school district and the city. Table III.2-a lists the data requirements for the Enrollment Module.

TABLE III.2-4 ENROLLMENT MODEL DATA REQUIREMENTS

Computer Program Permanent Data Requirements

Run control data (see RUN CONTROL card format).

School name and school code for each school in the public school system.

Ethnic group title and code for each ethnic group for which enrollments are forecast.

Year title for each census year, current year, and each forecast year.

Grade title for each grade taught (PK-12) in the public school system.

Instructional program title for each instructional program defined by the program structure.

Program title for remaining programs for which enrollments are forecasted.

Initial Conditions

Ethnic group population by census tract for census years - 1940, 1950, 1960, and 1970.

Current year public enrollment by ethnic group by grade within school

Current year public enrollment in Special Education by ethnic group by grade within school.

Current year public enrollment by ethnic group for Continuing Education.

Current year public enrollment by ethnic group by grade within secondary program.

Current year grade group occurrence by school.

Current year assignment of school service areas by census tract.

Area of each 1970 census tract.

DESCRIPTION OF ENROLLMENT MODULE RUNS

1. The initial ENROLLMENT MODULE run requires the preparation and input of 16 different input card types. Enrollment forecasts by school are generated based upon a five year population based forecast calculated by the computer program.

   For second and subsequent runs of the ENROLLMENT MODULE computer program, the user can chose to exercise one or both override options, in which case additional input card types are required. One option feature permits the user to bypass the computer based population forecast calculation and to input directly the Y1-Y5 population estimates by ethnic group. The second option feature allows the user to override forecasted school enrollments and input for a specific forecast year estimates by ethnic group X by grade within school. These options may be exercised together or individually. All output reports generated with the override in effect are so noted with an English language descriptor displayed on the printout.

2. The overall order of data input cards for initial and subsequent runs of the ENROLLMENT MODULE are given in Table III.2-b. In most instances, several cards of the same type are required as input. For example, a SCHOOL TITLE card must be prepared for each school in the district, while only one RUN CONTROL card is required.

TABLE III.2-b OVERALL ORDER OF ENROLLMENT MODULE COMPUTER PROGRAM DATA INPUT CARDS

- Run control card
- Set of school title cards
- Set of ethnic title cards
- Set of year title cards
- Set of grade title cards
- Set of grade group title cards
- Set of program title cards
- Set of census tract area cards
- Set of population data cards
- Spanish population data card
- Population forecast override data card for Initial Run or a Set of population forecast override data cards for subsequent runs.
- Set of school enrollment data cards
- Set of school service area assignment cards
- Set of grade group occurrence cards
- Enrollment forecast option flag card only for Initial Run or a set of enrollment forecast override data cards for subsequent runs
- Set of Secondary enrollment data cards
- Set of Special Education enrollment cards
- Continuing Education enrollment card

GENERAL INSTRUCTIONS FOR RECORDING INPUT DATA

1. Record input data on either IBM Form X20-8030-03 UM/025, General Purpose Card Punching Form, IBM Form GX28-7327-6 U/M050, FORTRAN Coding Form, or specific forms discussed below.

2. On each coding form completed, enter the program title "Enrollment Module" or "ENR", the name of the person completing the input forms, and the preparation date in the space provided. Retain actual sources of data and/or name of data source for future reference.

3. A data card consists of a number of fields. Each field is a consecutive set of columns on an 80 column card. There are two types of fields: numeric and alpha-numeric. The general form of data specifications or formats are the numeric forms nIw and nFw.d, and the alpha-numeric form nAw. The field format notation has the following meaning.

Specification	Type of Field
Iw	integer (numeric)
Fw.d	real number (without an exponent) - (numeric)
Aw	alpha-numeric

a. w is the width of the whole field (total number of columns in the field including a decimal point, if the specification is F)

b. d is the number of digits to the right of the decimal point

c. the decimal point is annotated in a card column, and is included in the width specification

d. where successive input or output fields are identical in format, an unsigned integer constant preceding one format specification, indicates the number of times that specification is repeated (F6.2, F6.2 is equivalent to 2F6.2)

e. Spacing is indicated by the general form nX, which causes n spaces or blanks to be inputted

f. Several examples will illustrate how data is to be recorded based on the card format specifications using the above definitions. Numeric fields are to contain numbers which are either numeric codes such as card format types or numeric quantities such as enrollment data, population data, etc. For every integer type numeric field a decimal point is not written in the field and the numbers should be right justified. For example, the number 1,789 written for field specified as I8 would look like this:

				1	7	8	9

For a real number type numeric field, a decimal point is written in the card column preceding the number of places to the right of the decimal point. The number should also be right-justified. For example, the percent 10.8 (%) written for a field specified as F5.1 would look like this:

	[illegible]	[illegible]	[illegible]	[illegible]

, and [illegible] written for a field specified as F10.3 would look like:

			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.

Alpha-numeric fields are to contain titles, e.g., titles of the ethnic groups, schools, programs, etc. Titles consist of alphabetic and numeric characters and blank spaces. Since what is written in the field is printed "as is" on output reports, titles should be left justified to improve the appearance and clarity of reports. If the format of an alpha-numeric field is 6A4 (24 columns) and the title Kindergarten is to be recorded, it should look like this:

K	I	N	D	E	R	G	A	R	T	E	N												

If the format specified for an input card is 3F10.0, and the numbers to be recorded are [illegible], [illegible], and [illegible], the data would be written as:

			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.

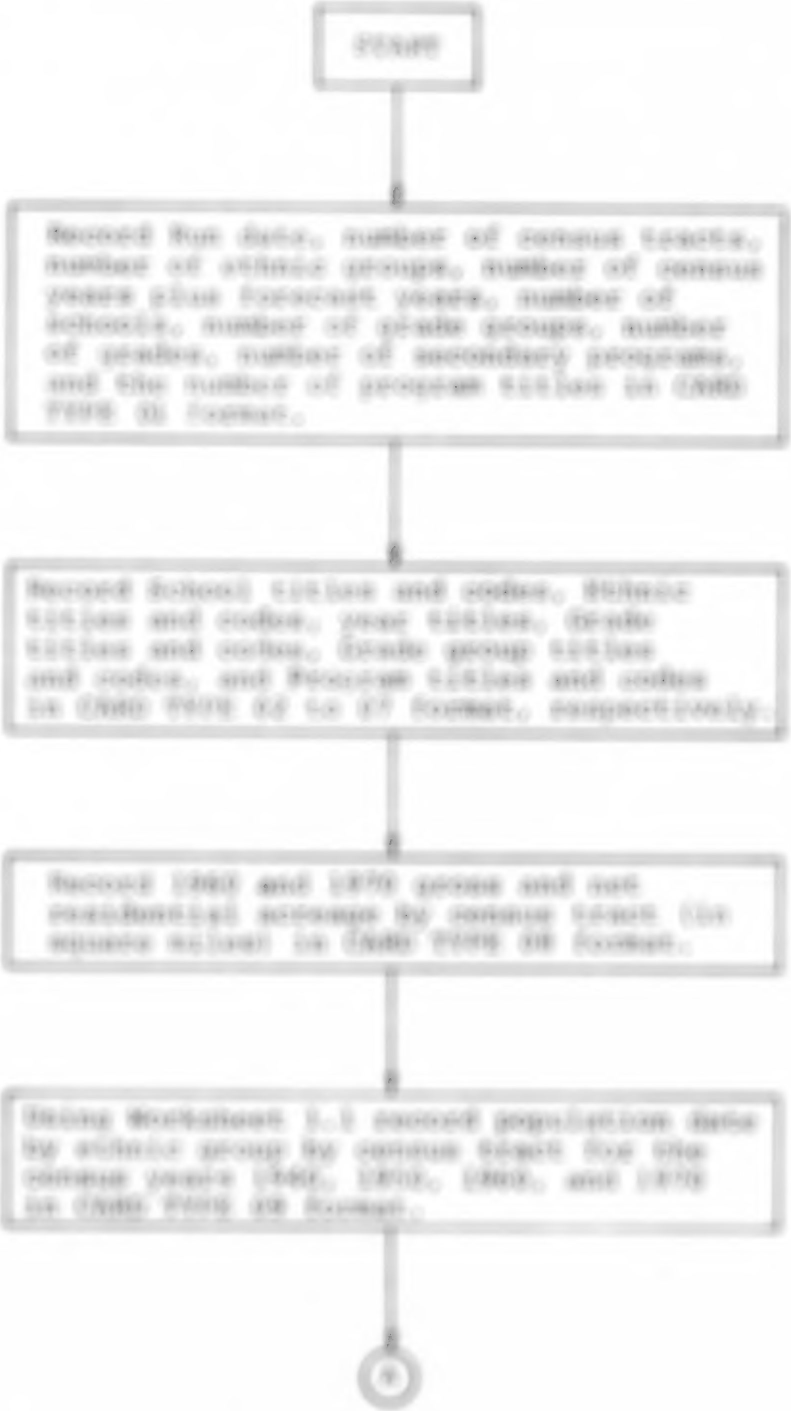
Note that for the last number the decimals were dropped.

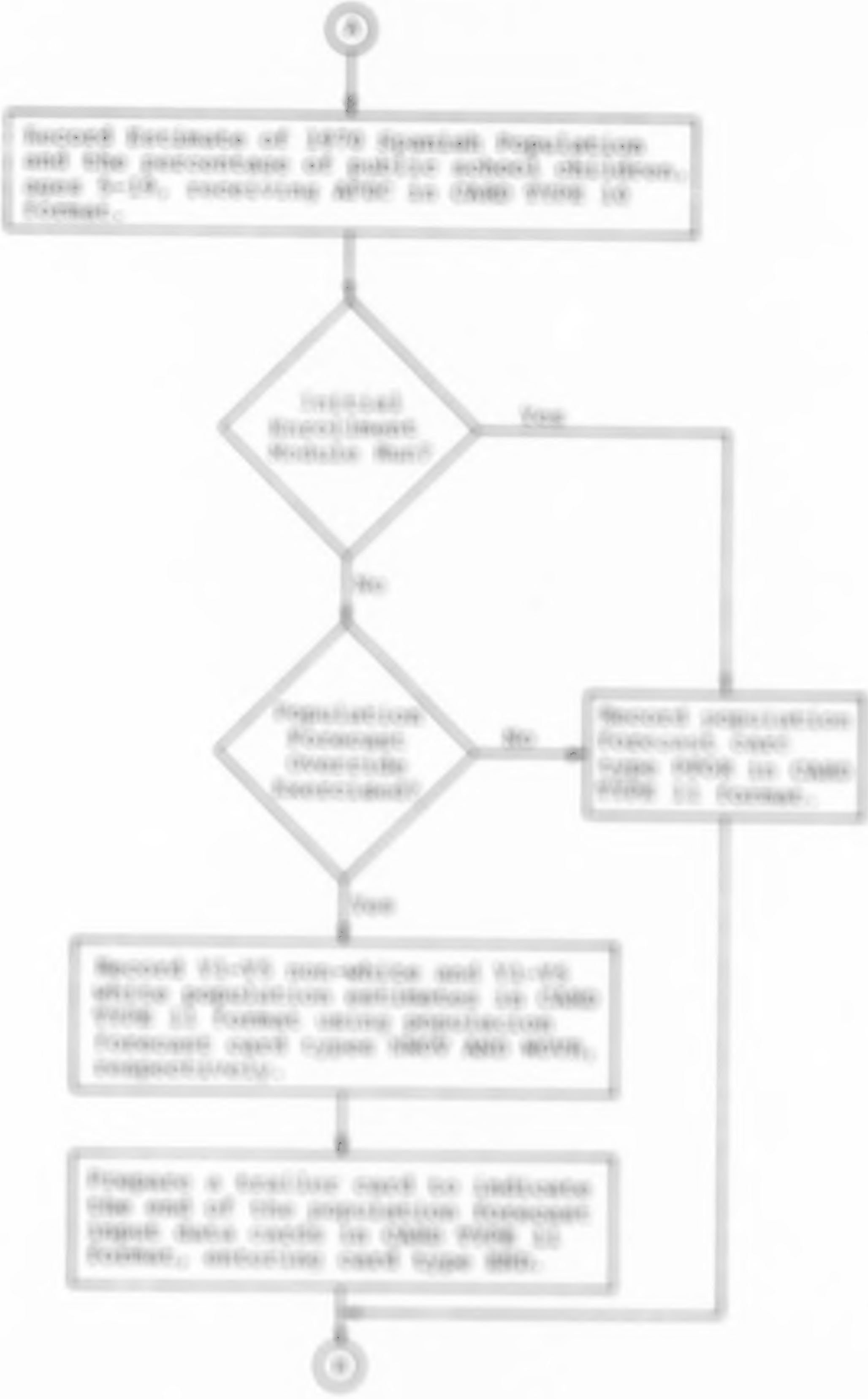
8. Chart III.2-8 presents in flowchart format the steps to be followed in completing the data cards for the ENROLLMENT MODULE.

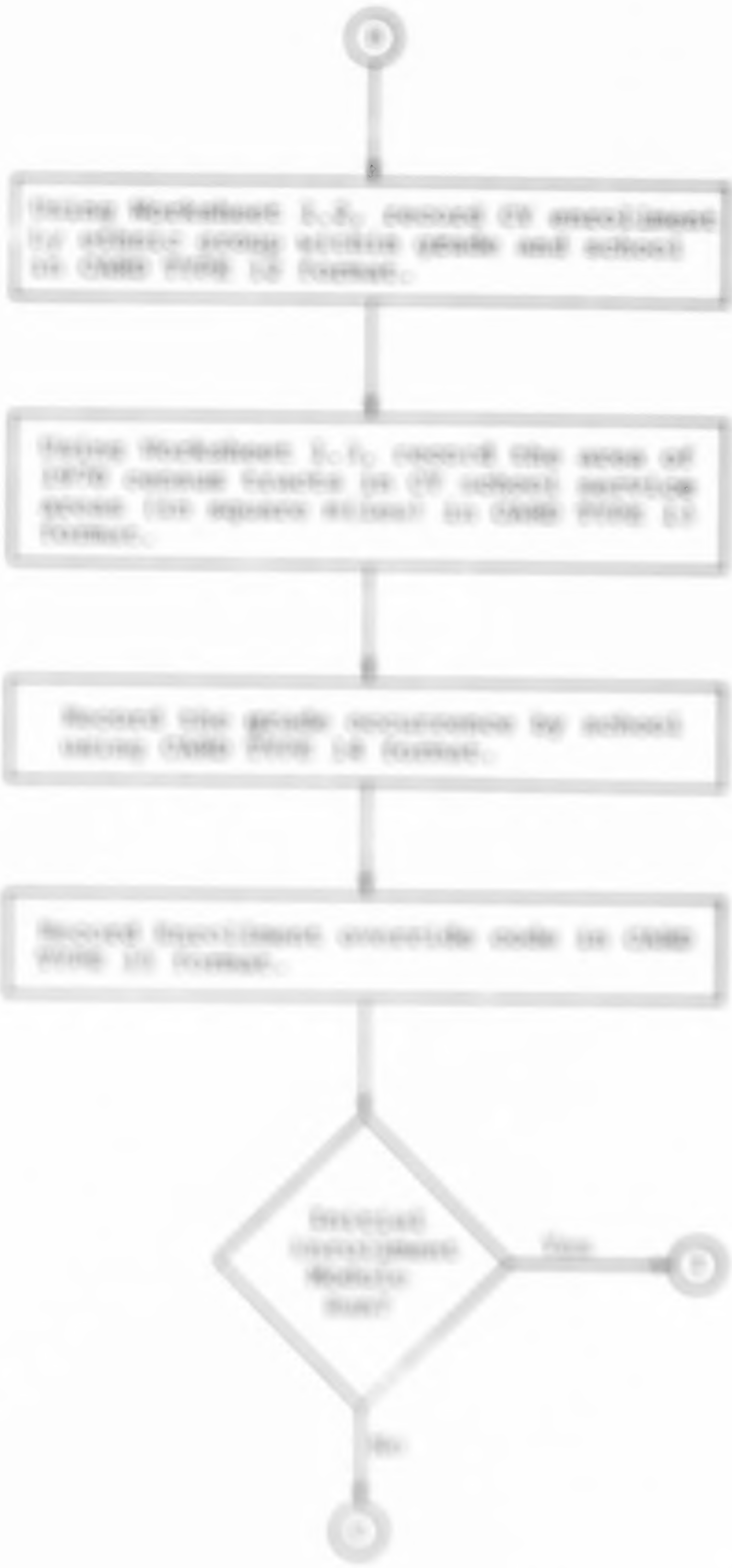
9. Collect completed forms and keypunch directly from the coded forms.

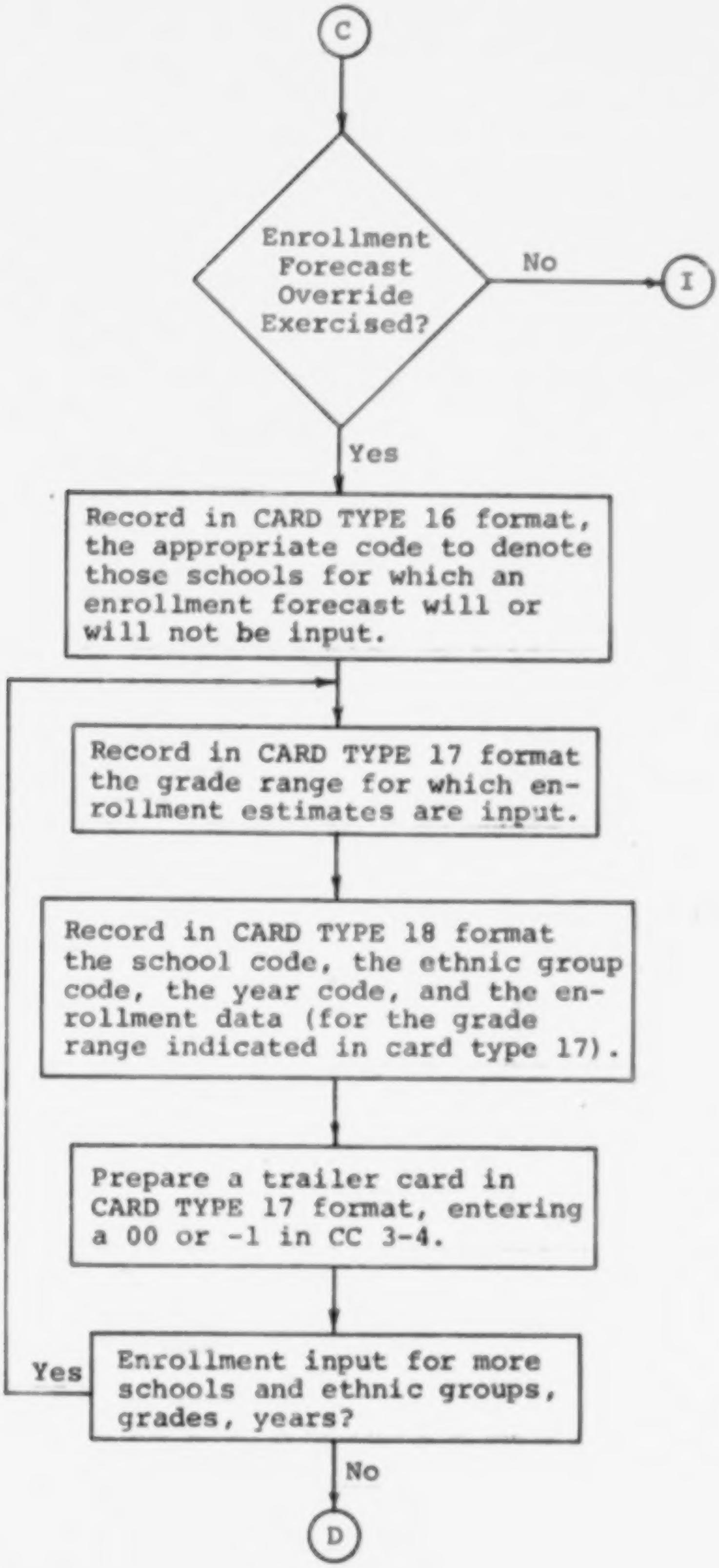
CHART III.2-2

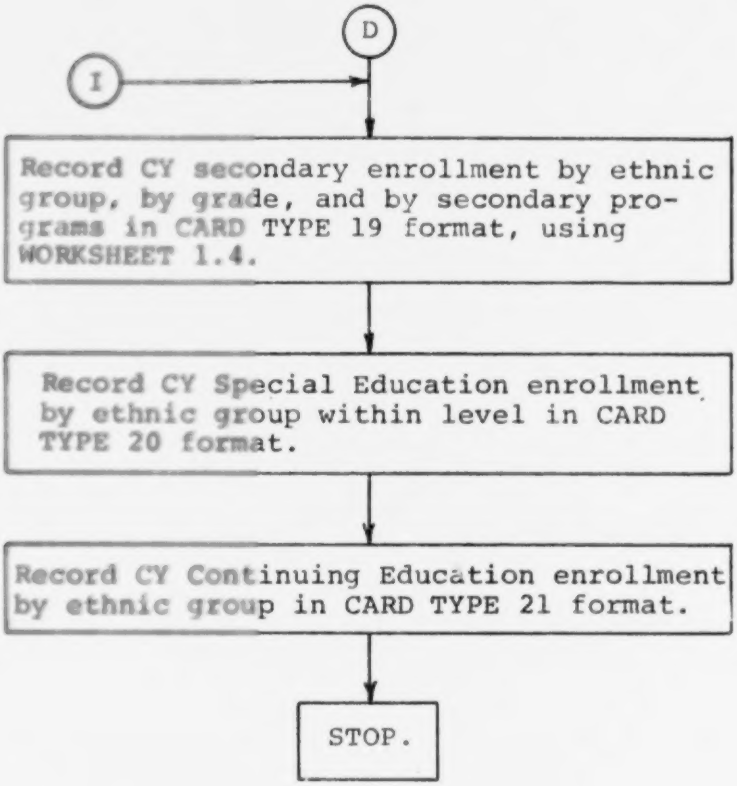
FLOWCHART OF STEPS FOR RECORDING DATA CARDS FOR ENROLLMENT MODULE COMPUTER PROGRAM


START
Record Run data, number of census tracts, number of ethnic groups, number of census years plus forecast years, number of schools, number of grade groups, number of grades, number of secondary programs, and the number of program titles in CARD TYPE 11 format.
Record School titles and codes, Ethnic titles and codes, year titles, Grade titles and codes, Grade group titles and codes, and Program titles and codes in CARD TYPE 12 to 17 format, respectively.
Record 1960 and 1970 gross and net residential acreage by census tract (in square miles) in CARD TYPE 18 format.
Using Worksheet 1.1 record population data by ethnic group by census tract for the census years 1940, 1950, 1960, and 1970 in CARD TYPE 19 format.
A


Record Estimate of 1970 Spanish Population and the percentage of public school children, ages 5-17, receiving AFDC in CARD TYPE 10 format.
Initial Enrollment Module Run?
Yes
No
Population Forecast Override Exercised?
No
Record population forecast card type 0808 in CARD TYPE 11 format.
Yes
Record 15-44 non-white and 15-44 white population estimates in CARD TYPE 11 format using population forecast card types 0809 and 0808, respectively.
Prepare a trailer card to indicate the end of the population forecast input data cards in CARD TYPE 11 format, entering card type 999.


Using Worksheet I.8, record FY enrollment by school group within grade and school in CAMB Form 12 format.
Using Worksheet I.7, record the area of 1970 census tracts in FY school service areas (in square miles) in CAMB Form 12 format.
Record the grade occurrences by school using CAMB Form 12 format.
Record Enrollment override code in CAMB Form 12 format.
Revised Enrollment Module Run?
Yes
No


C
Enrollment Forecast Override Exercised?
No
I
Yes
Record in CARD TYPE 16 format, the appropriate code to denote those schools for which an enrollment forecast will or will not be input.
Record in CARD TYPE 17 format the grade range for which enrollment estimates are input.
Record in CARD TYPE 18 format the school code, the ethnic group code, the year code, and the enrollment data (for the grade range indicated in card type 17).
Prepare a trailer card in CARD TYPE 17 format, entering a 00 or -1 in CC 3-4.
Yes
Enrollment input for more schools and ethnic groups, grades, years?
No
D


D
I
Record CY secondary enrollment by ethnic group, by grade, and by secondary programs in CARD TYPE 19 format, using WORKSHEET 1.4.
Record CY Special Education enrollment by ethnic group within level in CARD TYPE 20 format.
Record CY Continuing Education enrollment by ethnic group in CARD TYPE 21 format.
STOP.

INPUT CARDS - PURPOSES, FORMATS, AND DATA ESTIMATION

1. Run Control Card

   a. PURPOSE. The RUN CONTROL card inputs the date of the computer run and the values of variables used as DO-parameters during computer processing. The run date is also used to label all output reports.

   b. Prepare a RUN CONTROL card in CARD TYPE 01 format as follows:

      (1) Number of census tracts equals number of census tracts + 1, or 23. Twenty-three is accounted for by 22 populated census tracts plus additional storage to save totals across all census tracts. Although the City of Trenton is divided into 24 census tract, census tracts 23 and 24 are not included, since these represent a State mental hospital and a State prison, respectively.

      (2) The number of ethnic groups for which enrollment estimates are to be made is equal to the number of ethnic groups + 1, or four. Table III.2-c below lists the ethnic groups for which enrollment forecasts are generated plus storage for storing totals across ethnic group.

Table III.2-c Ethnic Groups and Codes for the Enrollment Module

ETHNIC GROUP	CODE
BLACK	01 or 1
SPANISH	02 or 2
OTHER	03 or 3
TOTAL	04 or 4

(3) The variable NOYRS equals 10, and is the sum of the following:

Number of census years on which population forecast is based (4 years for 1940, 1950, 1960, and 1970) + the current year (1) + the number of years for which enrollments are forecasted (usually five).

(4) The total number of schools in the district for which enrollments are forecasted equals 24. Table III.2-d lists the codes and the school names.

(5) The number of instructional programs or grade groups equals five. Table III.2-e lists the instructional program titles, the grade group titles corresponding to the program name, and the instructional program or grade group code.

Table III.2-d School Names and Codes, 1972.

Level	School	Code	Grade Occurrence
Elementary	Cadwalader	01	K-5
	Columbus	02	K-6
	Cook	03	K-5
	Franklin	04	K-6
	Grant	05	K-6
	Gregory	06	K-6
	Harrison	07	K-6
	Jefferson	08	K-6
	Junior 2 Elementary	09	K-6
	Junior 3 Elementary	10	K-6
	Junior 5 Elementary	11	K-6
	Monument	12	K-6
	Mott	13	K-6
	Parker	14	K-6
	Robbins	15	K-6
	Stokes	16	K-6
	Washington	17	K-6
	Wilson	18	K-6
Secondary	Junior High 1	19	7-9
	Junior High 2	20	7-9
	Junior High 3	21	7-9
	Junior High 4	22	7-9
	Junior High 5	23	7-9
	Trenton Senior High	24	10-12

Table III.2-e Instruction Program Titles and Codes

Program Title	Grade Group Title	Grade Group Code
Early Childhood	PK-K	01
Primary	1-3	02
Elementary	4-6	03
Intermediate	7-9	04
Secondary	10-12	05

(6) The number of unique grades taught in the district is fourteen, pre-kindergarten to grade 12. Refer to Table III.2-f for the grade titles and grade codes.

Table III.2-f **Grade Title List and Codes**

Grade Title	Code
PK	01
K	02
1st	03
2nd	04
3rd	05
4th	06
5th	07
6th	08
7th	09
8th	10
9th	11
10th	12
11th	13
12th	14
TOTAL	15

(7) The number of secondary level instructional programs equals 2, Vocational-Technical and Regular.

(8) The number of program names used to format output reports equals 19. Refer to Table III.2-g for the current list of program identifiers.

TABLE III.2-g - PROGRAM TITLES AND CODES

PROGRAM TITLE	PROGRAM TITLE CODE
Early Childhood	01
Primary (1-3)	02
Elementary (4-6)	03
Intermediate (7-9)	04
Secondary (10-12)	05
Regular	06
Vocational-Technical	07
Job Preparatory (Non-VT)	08
General and Unclassified	09
Ethnic Subtotal	10
Kindergarten	11
Grades 1 to 6	12
Grades 7 to 9	13
Grades 10 to 12 - Regular	14
Grades 10 to 12 - Voc. Tech.	15
Continuing Education	16
Special Classes	17
AFDC Estimate for TPS	18
Total Enrollment	19

CARD TYPE 01 - RUN CONTROL CARD (Format 3A4,I4,2I3,I4,I3,3I2,4X)

Card Columns	Data To Be Entered
CC1-12	Run date.
CC13-16	Number of census tracts in the school district.
CC17-19	Number of ethnic groups for which enrollment is estimated.
CC20-22	Number of years of census data input plus number of years for which enrollments are forecasted.
CC23-26	Number of schools in the district.
CC27-29	Number of instructional programs defined by STEP.
CC30-31	Number of grades in the instructional program.
CC32-33	Number of secondary level instructional programs.
CC34-35	Number of output report titles to be input.
CC40-41	CARD TYPE 01
CC42-43	Run number.

2. School Title Card

a. Purpose. The SCHOOL TITLE card is used to input the names of the schools in the school system. The school names are used to label output reports of school enrollment forecasts.

A SCHOOL TITLE card is prepared for each school in the district. The number of SCHOOL TITLE cards in the set must be equal to the number of schools cited in cc23-26 of the RUN CONTROL card.

Refer to Table III.2-d for the names and codes of schools in the district.

b. Prepare a SCHOOL TITLE card in CARD TYPE 02 format.

c. The overall order of the set of SCHOOL TITLE cards must be in ascending order of the school codes as follows:

(1) Elementary schools in order from code 01 to code 18

(2) Junior high schools in order from code 19 to code 23

(3) and the Senior high school.

CARD TYPE 02 - SCHOOL TITLE CARD (Format - 5A4, 23X)

Card Columns	Data To Be Entered
CC1-20	Name of the school.
CC23-25	School code.
CC40-41	CARD TYPE 02.

3. Ethnic Title Card

a. Purpose. The ETHNIC TITLE card is used to input the names of the ethnic groups for which enrollments are forecasted. The ethnic titles are used to label data fields on various output reports.

The number of ETHNIC TITLE cards in a set must be equal to the total number of ethnic groups cited in CC 17-19 of the RUN CONTROL card. Refer to Table III.2-c for the list of ethnic groups and ethnic group codes being used in the enrollment module. The label TOTAL signifies totals across ethnic groups, and is designated as an ethnic title in order to use the label readily on output reports.

b. Prepare an ETHNIC TITLE card for each ethnic group listed in Table III.2-c in CARD TYPE 03 format.

c. The overall order of the set of ETHNIC TITLE cards must be in ascending ethnic group code order.

CARD TYPE 03 - ETHNIC TITLE CARD (Format -2A4, 35X)

CC 1-8	Ethnic group title.
CC 40-41	CARD TYPE 03 .
CC 42-43	Number of the ethnic group in order of its appearance in the set of ETHNIC TITLE cards.

4. Year Title Card

a. Purpose. The YEAR TITLE card is used to input the year identifiers for the following years:

(1) The four census years 1940, 1950, 1960, and 1970, for which population data is input to the enrollment module.

(2) The current year, i.e. year when model is run.

(3) The forecast years (usually a five year period) for which the enrollment estimations are required.

The year identifiers are also used as labels on practically all output reports.

The number of YEAR TITLE cards in a set must be equal to the number of years cited in CC 20-22 of the RUN CONTROL card.

b. Prepare a YEAR TITLE card for each of the years as explained in paragraph 4a above in CARD TYPE 04 format.

(1) The overall order of the set of YEAR TITLE cards must be in ascending order.

CARD TYPE 04 - YEAR TITLE CARD (Format - I4, 39X)

CC 1-4	Year.
CC 40-41	CARD TYPE 04.
CC 42-43	Number of the YEAR TITLE card in order of its appearance in the set of YEAR TITLE cards.

5. Grade Title Card

a. Purpose. The GRADE TITLE card is used to input the grade identifiers for the school district. The grade titles are used to label data fields on output reports.

The number of GRADE TITLE cards in a set must be equal to the number of grades cited in CC 30-31 of the RUN CONTROL card plus one. The addition of one is used to input the TOTAL label so that it may be used as a row title in formatting output reports.

b. Prepare a GRADE TITLE card for each grade title listed in Table III.2-f in CARD TYPE 05 format.

(1) The overall order of a GRADE TITLE card within the set of GRADE TITLE cards must be in ascending grade code order.

CARD TYPE 05 GRADE TITLE CARD (Format - 2A4, 35X)

CC 1-8	Grade title.
CC 40-41	CARD TYPE 05.
CC 42-43	Number of the GRADE TITLE card in order of its appearance in the set of GRADE TITLE cards.

6. Grade Group Title Card

a. Purpose. The GRADE GROUP TITLE card is used to input the grade group titles corresponding to the instructional program names used in STEP. Table III.2-e lists the grade group and program titles. The grade group titles are used to label data fields on output reports.

The number of GRADE GROUP TITLE cards in a set must be equal to the number of instructional programs cited in CC 27-29 of the RUN CONTROL card.

b. Prepare a GRADE GROUP TITLE card for each grade group title listed in Table III.2-e in accordance with CARD TYPE 06 format.

(1) The overall order of a GRADE GROUP TITLE card within the set of GRADE GROUP TITLE cards must be in ascending grade group code order.

CARD TYPE 06 - GRADE GROUP TITLE CARD (Format - 2A4, 35X)

CC 1-8	Grade group title.
CC 40-41	CARD TYPE 06.
CC 42-43	Number of the GRADE GROUP TITLE card in order of its appearance in the set of GRADE GROUP TITLE cards.

7. Program Title Card

a. Purpose. The PROGRAM TITLE card is used to input the program names used in STEP. The program names are used to label data fields on output reports. Refer to Table III.2-g for a list of program titles currently in use in the Enrollment Module. Program titles 1-5 correspond to the instructional programs used in STEP. Program titles 6-9 refer to the names of secondary programs, however, only the Regular and Vocational-Technical Secondary programs are used in VERSION I of the Enrollment Module.

The number of PROGRAM TITLE cards in a set must be equal to the total number of program names cited in CC 34-35 of the RUN CONTROL cards.

b. Prepare a PROGRAM TITLE card for each title listed in Table III.2-g in CARD TYPE 07.

(1) The overall order of a PROGRAM TITLE card within the set of PROGRAM TITLE cards must be in ascending program title code order.

CARD TYPE 07 - PROGRAM TITLE CARDS (Format - 6A4, 19X)

CC 1-24	Program title.
CC 40-41	CARD TYPE 07.
CC 42-43	Number of the PROGRAM TITLE Card in order of its appearance in the set of PROGRAM TITLE cards.

8. Census Tract Area Card

a. Purpose. The CENSUS TRACT AREA card is used to input the area in acres of each census tract in the school district, and of the school district as a whole. Net residential acreage by census tract is entered for the year 1960, and gross acreage by census tract for 1960 and 1970.

The acreage of each census tract is used to calculate population density be census tract, for each forecast year based upon both 1960 residential area and 1970 gross area.

The number of CENSUS TRACT AREA cards in a set must be equal to the number cited in CC 13-16 of the RUN CONTROL card.

b. Prepare a CENSUS TRACT AREA card for each census tract (1 to 22) and for the school district as a whole (C=23) in CARD TYPE 08 format.

(1) Table III.2-h lists the net residential acreage by census tract for 1960 and the gross acreage by census tract for 1970. Data concerning land use and census tract acreage can be obtained from the City Department of Planning and Development.

(2) The overall order of a CENSUS TRACT AREA card in a set of such cards is in ascending census tract code order.

TABLE III.2-h - NET RESIDENTIAL ACREAGE AND GROSS ACREAGE BY CENSUS TRACT FOR THE CITY OF TRENTON FOR 1960 AND 1970, RESPECTIVELY

CENSUS TRACT	NET RESIDENTIAL ACRES (1960)	GROSS ACRES (1970)
01	41	293
02	56	120
03	87	146
04	82	132
05	70	107
06	84	137
07	43	85
08	33	124
09	97	377
10	46	265
11	91	334
12	132	395
13	152	383
14	148	301
15	69	168
16	24	74
17	84	231
18	72	286
19	39	160
20	42	162
21	108	234
22	112	264
*23	0	151
*24	0	17
25 (TOTAL)	1,712	4,948

* AREAS FOR CENSUS TRACTS 23 and 24 ARE NOT INPUT.

CARD TYPE 08 - CENSUS TRACT AREA CARD (Format - 2X, F5.0, 3X, F6.0, 19X

CC 1-2	Census tract number (also the number of the CENSUS TRACT AREA card in order of its appearance in the set of CENSUS TRACT AREA cards).
CC 3-7	Census tract net residential acreage for 1960.
CC 11-15	Census tract gross acreage for 1960.
CC 19-24	Census tract gross acreage for 1970.
CC 40-41	CARD TYPE 08.

9. Population Data Card

a. Purpose. The POPULATION DATA card is used to input population data by race within census tract for the census years 1940, 1950, 1960, and and 1970.

b. Use of data in enrollment model calculations

The population data is used to project total population by ethnic group for the forecast years, and to calculate population density by census tract for 1960, 1970, and the forecast years.

c. Prepare a POPULATION DATA card for each census tract and census year (1940, 1950, 1960, and 1970) in CARD TYPE 09 format using U. S. census data.

(1) Use WORKSHEET 1.1 to record census data as follows:

(a) Fill in the appropriate year in the blank provided in the title line.

(b) Record the name of the analyst, the date, the data source, and the applicable program (ENROLLMENT MODULE) in the spaces provided.

(c) Census data required as data input to the Enrollment Module may be obtained from the Census for the respective census years. If an ethnic group is not represented in a census tract enter zero.

CARD TYPE 09 - POPULATION DATA CARD (Format - 16X, F7.0, 4X, F7.0, 4X, F7.0)

Card Columns	Data To Be Entered
CC1-2	Census tract number (also the number of the input card in order of its appearance in the set of POPULATION DATA cards).
CC3-6	Census year to which the population data is applicable.
CC9-10	CARD TYPE 09.
CC17-23	Non-white (Black) population for the census tract noted in CC1-2 for census year indicated in CC3-6.
CC28-34	Spanish population for the census tract and the census year noted in CC1-2 and CC3-6, respectively.
CC39-45	All Other population for the census tract and the census year noted in CC1-2 and CC3-6, respectively.

Worksheet 1.1 Census Data by Race Within Census Tract for Census Year ________

Name	Date	Data Source	Program

Record data in the blocks provided (Card Type 09 Format). Keypunch population data input cards directly from Worksheet 1.1.

Census Tract Code	Census Year	Do Not Use	Card Type	Do Not Use	Black Population	Do Not Use	Spanish Population	Do Not Use	Other Population	
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10. Spanish Population Data Card

a. Purpose. The Spanish POPULATION DATA card is used to input an estimate of 1970 Total Spanish speaking population, and the percentage of public school children (ages 5-19) in TPS receiving Aid For Dependent Children for the current year.

b. Use of data in enrollment model calculations

The Spanish population is used to calculate the ratio of total Spanish to total Non-white population. The Spanish population by census tract for 1970 is then calculated as the product of the aforementioned ratio time non-white population by census tract for 1970.

c. Prepare a Spanish Population Data card in CARD TYPE 10 format.

CARD TYPE 10 - SPANISH POPULATION DATA CARD (Format - 20X, F7.0, 8X, F6.2)

Card Columns	Data To Be Entered
CC1-2	CARD TYPE 10.
CC3-20	Enter descriptor 1970 EST SPAN POP.
CC21-27	Estimate of total Spanish population for 1970.
CC28-35	Enter PCT AFDC.
CC36-41	Current year estimate of the percentage of children, ages 5-19 in TPS, receiving Aid for Dependent Children (AFDC).

11. Population Override Data Card

a. Purpose. The POPULATION OVERRIDE data card is used to input the method selected for forecasting population, and also the Y1-Y5 population estimates by ethnic group when the population override option is exercised.

b. Population Forecast Selection Options. Two population forecast options are available: calculation of the ethnic group population forecast calculated in using time trending or the direct input by the user of the Y1-Y5 population forecast as estimated by district planners. For the initial ENROLLMENT MODULE run, it is recommended that the forecast be calculated by the program, and that the override option be exercised only on subsequent runs. The override option should be exercised when such action is deemed appropriate based upon careful review and analysis of the calculated forecast. When the population override is used, the planner must input estimates for each ethnic group, non-white and white. Acceptable population estimates calculated by the first ENROLLMENT MODULE run can also be read as input in subsequent computer runs when the override is used. Procedures for exercising the population forecast options are as follows:

(1) Computer program calculation of population forecast:

(a) Prepare one input card in CARD TYPE 11 format, entering PFOR in CC1-4 (the balance of the input card is blank).

(2) Input of population forecast: Override option exercised:

(a) Prepare the following set of three cards in CARD TYPE 11 format:

1) CARD 1. Enter NWOV in CC1-4 and the CY, and Y1-Y5 non-white population estimates in CC7-66, respectively.

2) CARD 2. Enter WOVR in CC1-4 and the CY, and Y1-Y5 white population estimates in CC7-66, respectively.

3) CARD 3. Enter END in CC1-3 (leave the balance of the input card blank). This card signals the end of population forecast input cards to the computer program. Accordingly, the END card is mandatory when exercising the input option and immediately follows the last population forecast input card.

CARD TYPE 11 - POPULATION FORECAST OVERRIDE DATA CARD
(Format - A4, 2X, 6F10.0)

Card Columns	Data To Be Entered
CC1-4	Card type identifier.
CC5-6	Ethnic group code (Non-white = 01, White = 02).
CC7-16	CY population estimate for the ethnic group cited in CC5-6.
CC17-26	Y1 population estimate for the ethnic group cited in CC5-6.
CC27-36	Y2 population estimate for the ethnic group cited in CC5-6.
CC37-46	Y3 population estimate for the ethnic group cited in CC5-6.
CC47-56	Y4 population estimate for the ethnic group cited in CC5-6.
CC57-66	Y5 population estimate for the ethnic group cited in CC5-6.

NOTE: CC 7-16 are blank if the Card type identifier is PFOR or END.

12. Enrollment Data Card

a. PURPOSE. The ENROLLMENT DATA Card is used to input current year enrollment data (as of September 30) by ethnic group within grade and school.

b. Use of data in enrollment model calculations

The enrollment data is aggregated across all schools to obtain current year enrollment totals by ethnic group within grade. The current year enrollment total is then used to calculate an enrollment factor by race within grade, i.e., the proportion of students enrolled by ethnic group by grade per 1000 of the current year (forecasted or actual) total population by ethnic group. The product of the enrollment factor by ethnic group within grade times forecasted population by ethnic group within census tract gives an enrollment forecast by grade within race within census tract.

c. Prepare an ENROLLMENT DATA Card for each school in CARD TYPE 12 format.

(1) Complete WORKSHEET 1.2 for each school in the district to record school enrollment as of September 30 for the current year as follows:

(a) Fill in the month, day, and year in the title line.

(b) Complete the school name and level (elementary or secondary), the school code and the starting and ending grade in the school. The grade range information will be used to prepare the GRADE GROUP OCCURRENCE card.

(c) Circle Y or N, as appropriate, to indicate if Special Education classes are conducted at the school.

(d) Sign your name, date, and the program name in the appropriate blocks.

(e) Enter the required codes and data in the numbered blocks in strict compliance with CARD TYPE 12 format as the ENROLLMENT DATA card will be keypunched directly from WORKSHEET 1.2. Table III.2-c and Table III.2-d list the titles and codes for ethnic groups and schools, respectively.

(f) If a grade is not taught at the school, e.g., grades 7-12 are not taught at an elementary school, enter zeros for each grade by ethnic group.

d. Keypunch ENROLLMENT DATA Cards directly from WORKSHEET 1.2 in the card columns indicated on the form as follows:

(1) One ENROLLMENT DATA Card (by school by ethnic group) for each column of ethnic group data. The grade, grade code and total columns are not to be keypunched.

e. The input order of ENROLLMENT DATA Cards within the set are as follows:

- For school 01
    - Ethnic group 01 enrollment, grades Pk-12
    - Ethnic group 02 enrollment, grades Pk-12
    - Ethnic group 03 enrollment, grades PK-12
- For school 02
    - Ethnic Group 01 enrollment, grades PK-12
    - Ethnic Group 02 enrollment, grades PK-12
    - Ethnic Group 03 enrollment, grades PK-12
- For school 03
    - etc.

CARD TYPE 12 - ENROLLMENT DATA CARD (Format I2,I1,1X,14F4.0)

CC1-2	School code.
CC3	Ethnic group code.
CC5-8	Pre-kindergarten enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC9-12	Kindergarten enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC13-16	1st grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC17-20	2nd grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC21-24	3rd grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC25-28	4th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC29-32	5th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC33-36	6th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC37-40	7th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC41-44	8th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC45-48	9th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.

CARD TYPE 12 - ENROLLMENT DATA CARD (Format I2,I1,1X,14F4.0)
(continued)

CC49-52	10th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC53-56	11th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.
CC57-60	12th grade enrollment for ethnic group and school coded in CC3 and CC1-2, respectively.

WORKSHEET 1.2 CURRENT YEAR ENROLLMENT AS OF ____________________

School Name and Level	School Code	Grade To
Name	Date	Program

Grade	Grade Code	For Official Use	ETHNIC GROUP			
			Black 1 2 3 1	Spanish 1 2 3 2	Other 1 2 3 3	Total
PK	01		5 8 .	5 8 .	5 8 .	
K	02		9 12 .	9 12 .	9 12 .	
1	03		13 16 .	13 16 .	13 16 .	
2	04		17 20 .	17 20 .	17 20 .	
3	05		21 24 .	21 24 .	21 24 .	
4	06		25 28 .	25 28 .	25 28 .	
5	07		29 32 .	25 32 .	29 32 .	
6	08		33 36 .	33 36 .	33 36 .	
7	09		37 40 .	37 40 .	37 40 .	
8	10		41 44 .	41 44 .	41 44 .	
9	11		45 48 .	45 48 .	45 48 .	
10	12		49 52 .	49 52 .	49 52 .	
11	13		53 56 .	53 56 .	53 56 .	
12	14		57 60 .	57 60 .	57 60 .	
Total						

13. School Service Area Assignment Card

a. PURPOSE. The SCHOOL SERVICE AREA ASSIGNMENT Card is used to input the area of a census tract (in square miles) that is assigned to a school service area.

b. Use of data in enrollment model calculations

The census tract area by school service area is used to calculate the percentage of a school service area contained in a census tract. This latter percentage is the ratio of the area of a census tract in a school service area divided by the total area of the census tract.

The school service area assignment percent times the enrollment forecast by grade and race within census tract produces the Y1-Y5 enrollment forecast by ethnic group by grade within school.

c. An annual review of school service area assignments by census tract is required as follows:

(1) Conduct a review of school service boundaries for elementary and junior high schools separately.

(2) Superimpose an elementary school service area map and a junior high school service area map respectively, on a 1970 census tract map of the City of Trenton. Large scale maps of the City of Trenton can be obtained from the City Department of Planning and Development, Division of Planning.

(a) Use a planimeter to measure census tract area by school service area.

(b) Record the areas on WORKSHEET 1.3 in accordance with CARD TYPE 13 format as follows:

1) Print the school name in the spaces provided (CC1-8), proceeding in ascending school code order.

2) Enter the school code in CC10-11.

3) Census tracts are shown across the page. Enter the census tract numbers in CC13-15, starting with census tract 01.

4) Enter the school service area by census tract in CC18-23 of the appropriate census tract column, e.g., since Franklin School service area includes parts of census tracts 2, 3, 4, and 5, FRANKLIN is entered in CC1-8, 04 in CC10-11, and the areas in each of the respective census tracts are entered in CC18-23 for census tract columns 2, 3, 4, and 5, respectively.

d. Keypunch a set of SCHOOL SERVICE AREA ASSIGNMENT Cards directly from WORKSHEET 1.3 in the card columns indicated, by proceeding column by column and preparing one card per census tract entry containing school name and code, census tract number, and area.

CARD TYPE 13 - SCHOOL SERVICE AREA ASSIGNMENT CARD (Format 9X, I2,1X,I3,2X,F6.3)

CC1-8	School name.
CC10-11	School code.
CC13-15	Census tract.
CC18-23	Area (square miles) of the census tract cited in CC1-8 that is in the school service area of the school indicated in CC1-8.

WORKSHEET 1.3

SCHOOL SERVICE AREA BY CENSUS TRACT

Name		Date							
		Census Tract							
School Name	School Code	13 15	13 15	13 15	13 15	13 15	13 15	13 15	13 15
1 8	10 11	18 . 23	18 . 23	18 . 23	18 . 23	18 . 23	18 . 23	18 . 23	18 . 23
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14. Grade Group Occurrence Card

a. PURPOSE. The GRADE GROUP OCCURRENCE Card is used to input grade occurrence for a school.

b. Use of data in enrollment model

The GRADE GROUP OCCURRENCE code is used as a flag to determine if enrollment is to be calculated for a grade at a school, i.e., if the flag is "on," enrollment for the grade is computed, and if the flag is "off," enrollment for the grade is not calculated.

c. Prepare a GRADE GROUP OCCURRENCE Card for each school in the school system in CARD TYPE 14 format, entering a 1 if the grade is taught at the school or a zero if it is not.

CARD TYPE 14 - GRADE GROUP OCCURRENCE CARD (Format 2X,14I1)

CC1-2	School code.
CC3	Pre-kindergarten occurrence at the school cited in CC1-2.
CC4	1st grade occurrence at the school cited in CC1-2.
CC5	2nd grade occurrence at the school cited in CC1-2.
CC6	3rd grade occurrence at the school cited in CC1-2.
CC7	4th grade occurrence at the school cited in CC1-2.
CC8	5th grade occurrence at the school cited in CC1-2.
CC9	6th grade occurrence at the school cited in CC1-2.
CC10	7th grade occurrence at the school cited in CC1-2.
CC11	8th grade occurrence at the school cited in CC1-2.
CC12	9th grade occurrence at the school cited in CC1-2.
CC13	10th grade occurrence at the school cited in CC1-2.
CC14	11th grade occurrence at the school cited in CC1-2.
CC15	12th grade occurrence at the school cited in CC1-2.

15. School Enrollment Forecast Override Procedures

a. Purpose. Several input cards are required to override the calculate school enrollment forecast, and input enrollment estimates directly. The following ordered series of input cards are required:

(1) ENROLLMENT OVERRIDE card is used to set the option flag which indicates if the enrollment override option is in effect. If the override is not exercised, the remaining cards are not required.

(2) SCHOOL OVERRIDE card is used to input the identification of schools for which enrollment is a direct estimate.

(3) GRADE RANGE card is used to input the lower grade and upper grade, i.e., the grade range for which enrollment estimates are entered.

(4) ENROLLMENT DATA card is used to input the school and ethnic group codes, the year, and the revised enrollment data.

Thus, enrollment data is input for one ethnic group during one school year, at one school for a grade or range of grades. The ENROLLMENT OVERRIDE card and the SCHOOL OVERRIDE card are the first two cards in the set of school enrollment override input cards. These two cards are required once. Thereafter, a set of cards consisting of the GRADE RANGE card and an ENROLLMENT DATA card is required to input enrollment by grade for an ethnic group in a specific school for a particular year.

b. Enrollment Forecast Selection Options. An enrollment forecast by ethnic group and grade within school for each of five years is calculated by the computer program or the forecast calculation can be bypassed and input. Enrollment estimates are input by ethnic group, school, and year for a range of grades.

For the initial ENROLLMENT MODULE run, it is suggested that the enrollment forecast be calculated by the computer program. It is recommended that the override option be exercised on subsequent runs only after the calculated forecast has been analyzed carefully by system planners and individual school principals to determine the acceptability of the computed forecasts.

Enrollment forecast override procedures are as follows:

(1) Initially, run the ENROLLMENT MODULE without exercising any enrollment forecast override.

(a) Prepare an ENROLLMENT FORECAST OVERRIDE INPUT card in Card Type 15 fromat entering a 00 in CC 5-6, which causes the computer program enrollment override procedures to be bypassed.

(2) Distribute to school principals the Y1-Y5 enrollment forecast reports generated by the initial ENROLLMENT MODULE run.

(a) Principals are to review the calculated Y1-Y5 enrollment forecast reports based upon his or her best judgment of forces at work in the immediate school community which will influence his school's enrollments over the next five years.

(b) The aforementioned review should be conducted while taking into consideration some of the following:

1) Review of the September 30 enrollment by ethnic group by grade for several past years to determine any trends.

2) Changes in the housing stock in the school service area, i.e., new construction of single family or multifamily housing units, renovation of

existing housing, demolitions, plans for urban renewal, etc. The City Department of Planning and Development, the Public Housing Authority, and the State Department of Labor and Industry can provide data about housing trends in Trenton.

3) Changes in the ethnic composition of the population in the school service area, including migration in or out.

4) Economic forces at work in the community, e.g., influx or loss of business, changes in tuition for non-public schools, etc.

(3) If after review of the school enrollment forecast report, adjustments are required to the calculated forecast, the principal should indicate changes on the forecast report as follows:

(a) Make changes on the output report in red pencil.

(b) Cross out the estimate to be changed.

(c) Annotate the estimate to be input next to the figure it replaces.

(d) Sign your name and date on the output report.

(e) Prepare a memorandum in which you cite the reasons for each enrollment change, and attach it to the output report.

(4) If no changes are required, sign your name and the date.

(5) Return all reviewed output reports to the Director, Department of Planning, Research, and Evaluation.

(6) The principal planner will receive and review all output reports from the principals, and prepare the necessary input cards to enter the approved enrollment changes:

   (a) Prepare one ENROLLMENT FORECAST OVERRIDE INPUT card in Card Type 15 format, entering 01 in CC 5-6. This signals the computer program that the user is exercising the enrollment forecast override option.

   (b) Prepare one SCHOOL OVERRIDE OPTION card in Card Type 16 format, entering a 0 or a 1 in a card column to represent no enrollment override, respectively. Each card column, starting in CC 5 and ending in CC 28, represents a specific school, being arranged in ascending school code order (e.g., CC 5 is school code 1, CC 6 is school code 2, CC 7 is school code 3, and so on to CC 28 which represents school code 24). Therefore, be sure to enter 0 or 1, as appropriate, in the correct card column. Table III.2-a provides a list of school names and school codes.

(c) Prepare a GRADE RANGE card and an ENROLLMENT DATA card in Card Type 17 and 18 format, respectively, for each ethnic group within school and year for which enrollments are to be input.

(d) Prepare a card in Card Type 19 format which signals the end of enrollment input.

Enrollment Forecast Override Input Cards

CARD TYPE 15 - ENROLLMENT FORECAST OPTION FLAG Card - (Format 4X, I2)

Card Columns	Data To Be Entered
CC 1-2	Enter CARD TYPE 15.
CC 3-4	Enter OR.
CC 5-6	Enter 00 if no enrollment override, or 01 if the enrollment override is to be exercised.

CARD COLUMN 16 - SCHOOL OVERRIDE OPTION FLAG (Format 4X, 24I1)

Card Type	Data To Be Entered
CC 1-2	Enter CARD TYPE 16.
CC 3-4	Enter S0.

Each card column from CC 5 to CC 28 represents a school in the Trenton Public School System, starting with school code 1 (Cadwalder) and continuing in ascending order to school code 24 (Trenton Senior High). Enter a 1 in the appropriate card column if enrollment estimates are to be input for the school represented by the card column, or enter 0 if estimates are calculated for the school represented by the card column.

CARD TYPE 17 - GRADE RANGE CARD (Format 2X, I2,I2)

Card Columns	Data To Be Entered
CC 1-2	Enter CARD TYPE 17.
CC 3-4	Enter grade code of the lowest grade in the school for which enrollment data is to be input for the school, ethnic group, and year specified in CARD TYPE 18.
CC 5-6	Enter grade code of the highest grade in the school for which enrollment data is to be input for the school, ethnic group and year specified in CARD TYPE 18.

Note: If the lower grade code equals 01 and the higher grade code equals 08, enrollment is input for grades PK through 6th. If the lower code is 03 and the higher code is 03, enrollment is input for 1st grade only.

CARD TYPE 18 - ENROLLMENT DATA (Format 8X,3I2,8F4.0)

Card Columns	Data To Be Entered
CC 1-2	Enter CARD TYPE 18.
CC 3-7	Enter ENOVR.
CC 8-9	Enter the school code of the school for which enrollment is input.
CC 10-11	Enter the ethnic group code of the ethnic group for which enrollment is input.
CC 12-13	Enter the year for which enrollment is input. Y=2 is Y1, Y=3 is Y2, and so on.
CC 15-18	Enrollment data for the lowest grad cited in CARD TYPE 17.
CC 19-20	Enter enrollment data for the next higher grade.
CC 23-26	Enter enrollment data for the next higher grade.
CC 27-30	Enter enrollment data for the next higher grade.
CC 31-34	Enter enrollment data for the next higher grade.
CC 35-38	Enter enrollment data for the next higher grade.
CC 39-42	Enter enrollment data for the next higher grade.
CC 43-46	Enter enrollment data for the next higher grade.

CARD TYPE 19 - TRAILER CARD (Format 2X,I2)

Card Columns	Data To Be Entered
CC 1-2	Enter CARD TYPE 19.
CC 3-4	Enter a 00 or -1.

16. Secondary Enrollment Data Card

a. PURPOSE. The SECONDARY ENROLLMENT DATA Card is used to input current year secondary enrollment data by race within grade within secondary program.

b. Prepare a SECONDARY ENROLLMENT DATA Card for each secondary program in CARD TYPE 20 format.

(1) Record CY secondary enrollment as of September 30 on WORKSHEET 1.4, entering the data in the appropriate card columns as specified by CARD TYPE 20 format. Refer to Table III.2-i for a list of secondary program titles and codes. The information to be entered on the header lines is self-explanatory.

(2) Record enrollment data for each secondary program in groups by ethnic group in ascending ethnic group code order. See Table III.2-c for the ethnic group codes.

c. Keypunch one card per line as recorded on WORKSHEET 1.4.

Table III.2-i SECONDARY PROGRAM TITLES AND CODES

Program	Alphabetic Code	Numeric Code*
College Preparatory (All Secondary Program Other Than Vocational Technical)	CP	1
Vocational Technical	VT	2

---

* The numeric code denotes the order, within ethnic group, in which secondary enrollment data cards are input, i.e. College preparatory-Black, Vocational-Technical-Black, College Preparatory-Spanish, etc., are input in the order indicated.

CARD TYPE 20 - SECONDARY ENROLLMENT DATA CARD (Format 3X,3F5.0)

CC1-2	Secondary program code.
CC3	Ethnic group code.
CC4-8	10th grade enrollment in the secondary program cited in CC1-2 for the ethnic group in CC3.
CC9-13	11th grade enrollment in the secondary program cited in CC1-2 for the ethnic group in CC3.
CC14-18	12th grade enrollment in the secondary program cited in CC1-2 for the ethnic group in CC3.

WORKSHEET 1.4 SECONDARY ENROLLMENT BY SECONDARY PROGRAM FOR ________
YEAR

Name	Date	Step Module
Comments		

Secondary Program Code	Ethnic Group Code	ENROLLMENTS			
		10th CC4-8	11th CC9-13	12th CC14-18	Total
1 2	3	4 8	9 13	14 18	

17. Special Education Enrollment Card

a. Purpose. The SPECIAL EDUCATION ENROLLMENT card is used to input current year Special Education enrollment by ethnic group within level, i.e. elementary and secondary (in that order).

b. Use WORKSHEET 1.5 to record, collect, and tabulate Special Education enrollment by school site. The information required for the header lines on the form are self-explanatory.

(1) Group WORKSHEET 1.5 by level, and tabulate total Special Education enrollment by level. (Secondary level includes the junior highs and the senior high).

c. Record total Special Education enrollment by level on WORKSHEET 1.6 in accordance with CARD TYPE 21 format.

d. Keypunch one card per line as recorded on WORKSHEET 1.6.

CARD TYPE 21 - SPECIAL EDUCATION ENROLLMENT DATA CARD
(Format - 8X, 3F8.0)

Card Columns	Data To Be Entered
CC1-2	CARD TYPE 21.
CC3-8	Enter 'SPEDEL' as card identifier to denote Special Education Elementary level enrollment or SPEDSC as card identifier to denote Special Education Secondary level enrollment.
CC9-16	Special Education enrollment for the level cited in CC3-8 for ethnic group 1.
CC17-24	Special Education enrollment for the level cited in CC3-8 for ethnic group 2.
CC25-32	Special Education enrollment for the level cited in CC3-8 for ethnic group 3.

WORKSHEET 1.5 SPECIAL EDUCATION ENROLLMENT AS OF ____________

School Name	Level	Grades From To	
Name	Date	STEP Program	

COMMENT:

Grade	Grade Code		Ethnic Group			TOTAL
			Black	Spanish	Other	
PK						
K						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
TOTAL						

WORKSHEET 1.6 SPECIAL AND CONTINUING EDUCATION ENROLLMENT

FOR ______________________
School Year

Name	Date	STEP Program

COMMENT:

Card Type	Alphabetical Identifier	Enrollment			
		Black (CC9-16)	Spanish (17-24)	Other (25-32)	
1 2	3 8	9 16	17 24	25 32	
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18. Continuing Education Enrollment Card

a. Purpose. The CONTINUING EDUCATION ENROLLMENT card is used to input current year Continuing Education enrollment by ethnic group.

b. Use WORKSHEET 1.7 to record and collect enrollment by ethnic group for each continuing education program.

c. Tabulate the sum by ethnic group, and record total Continuing Education enrollment by ethnic group on WORKSHEET 1.6 in accordance with CARD TYPE 22 format.

d. Keypunch the total line as recorded on WORKSHEET 1.6.

CARD TYPE 22 - CONTINUING EDUCATION ENROLLMENT DATA Card (Format 8X,3F8.0)

Card Columns	Data To Be Entered
CC 1-2	CARD TYPE 22.
CC 3-8	Enter 'CEDBSO' as card identifier to denote Continuing Education - Black, Spanish, Other.
CC 9-16	Continuing Education enrollment for ethnic group 1.
CC 17-24	Continuing Education enrollment for ethnic group 2.
CC 25-32	Continuing Education enrollment for ethnic group 3.

WORKSHEET 1.7 CONTINUING EDUCATION ENROLLMENT AS OF ____________
Date

Name	Date	STEP Program

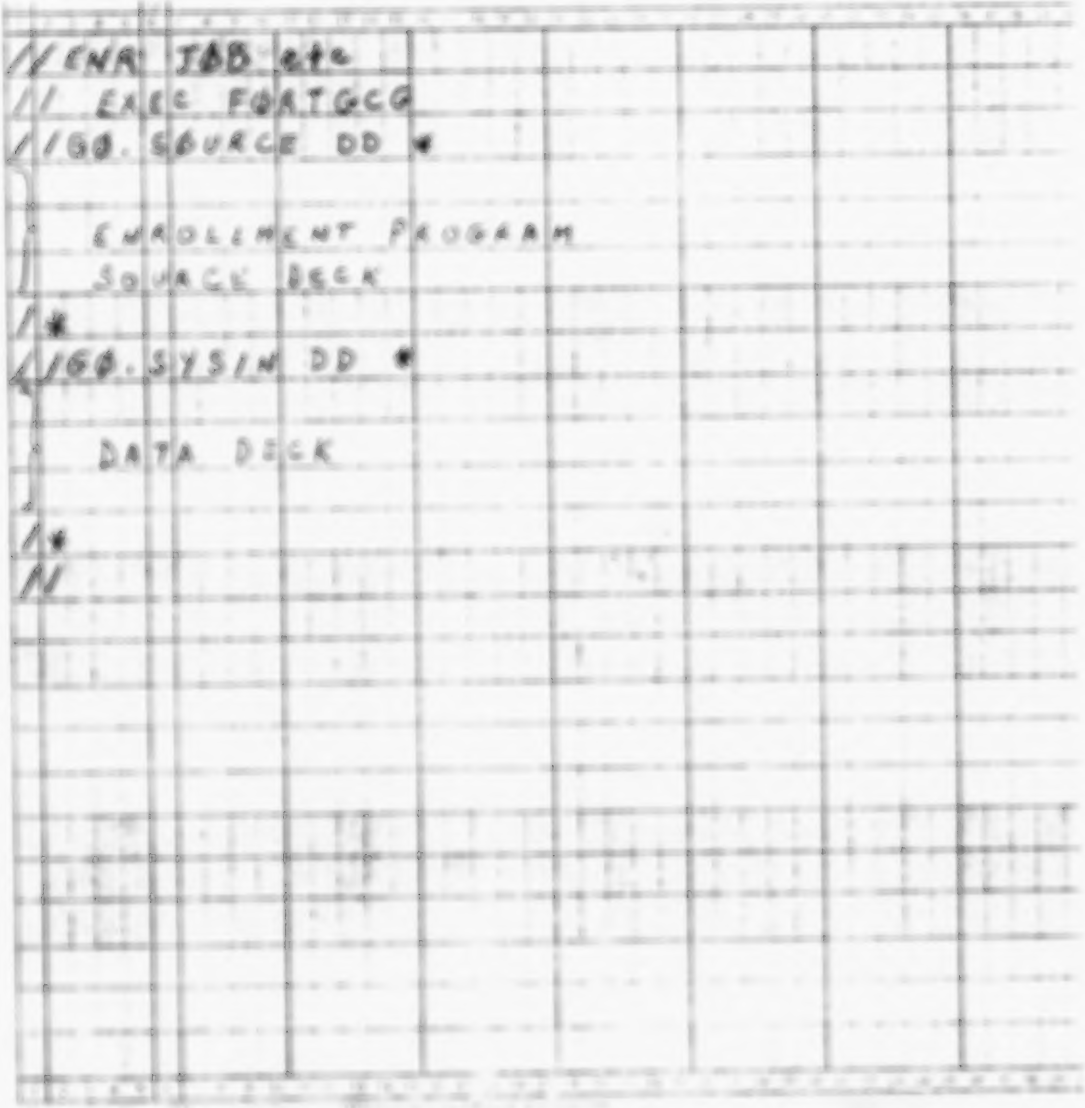
Comment

Continuing Education Program	Black	Spanish	Other	Total
TOTAL				

RUNNING AN ENROLLMENT MODULE JOB - CARD DECK ORDER

ORDER OF THE CARD DECK

a. The order of the card deck for running the ENROLLMENT MODULE computer program is shown in Exhibit III.2- Specific entries on the JOB card and JCL cards (Slash (/) in CC1) must be modified as appropriate, to conform to the specifications set by the computer facility at which the job is run.



```
//ENR JOB etc
// EXEC FORTGCG
//GO.SOURCE DD *

   ENROLLMENT PROGRAM
   SOURCE DECK
/*
//GO.SYSIN DD *

   DATA DECK

/*
//
```

DATA DECK ORDER FOR EXERCISING POPULATION FORECAST OVERRIDE AND SCHOOL ENROLLMENT FORECAST OVERRIDE

a. Table III.2-b provides the overall order of the data cards, and the order within each set of card types was previously provided in the data preparation instructions.

b. When the user choses to exercise the override option, additional input cards are added to the data deck. The arrangement of the data cards for exercising user option within the overall data deck are as follows:

- Run control card

.
.
.
.
.
.
.
.

- Other population card

Data input cards added for population forecast override
- NWOV Override card
- WOVR Override card
- END trailer card

- .
- .
- Grade group Occurrence card
- Enrollment forecast option flag card
- School override option flag card

Data input cards added for school enrollment forecast override.
- Grade Range card
- Adjusted Enrollment data for School 1, Ethnic group 1, Year 1 etc; and

as many sets of adjusted enrollment data which require input. Each set consists of the Grade Range and the adjusted Enrollment data input cards.

TRAILER card to signal end of adjusted enrollment input.

DOCUMENTATION OF THE ENROLLMENT MODULE
COMPUTER PROGRAM

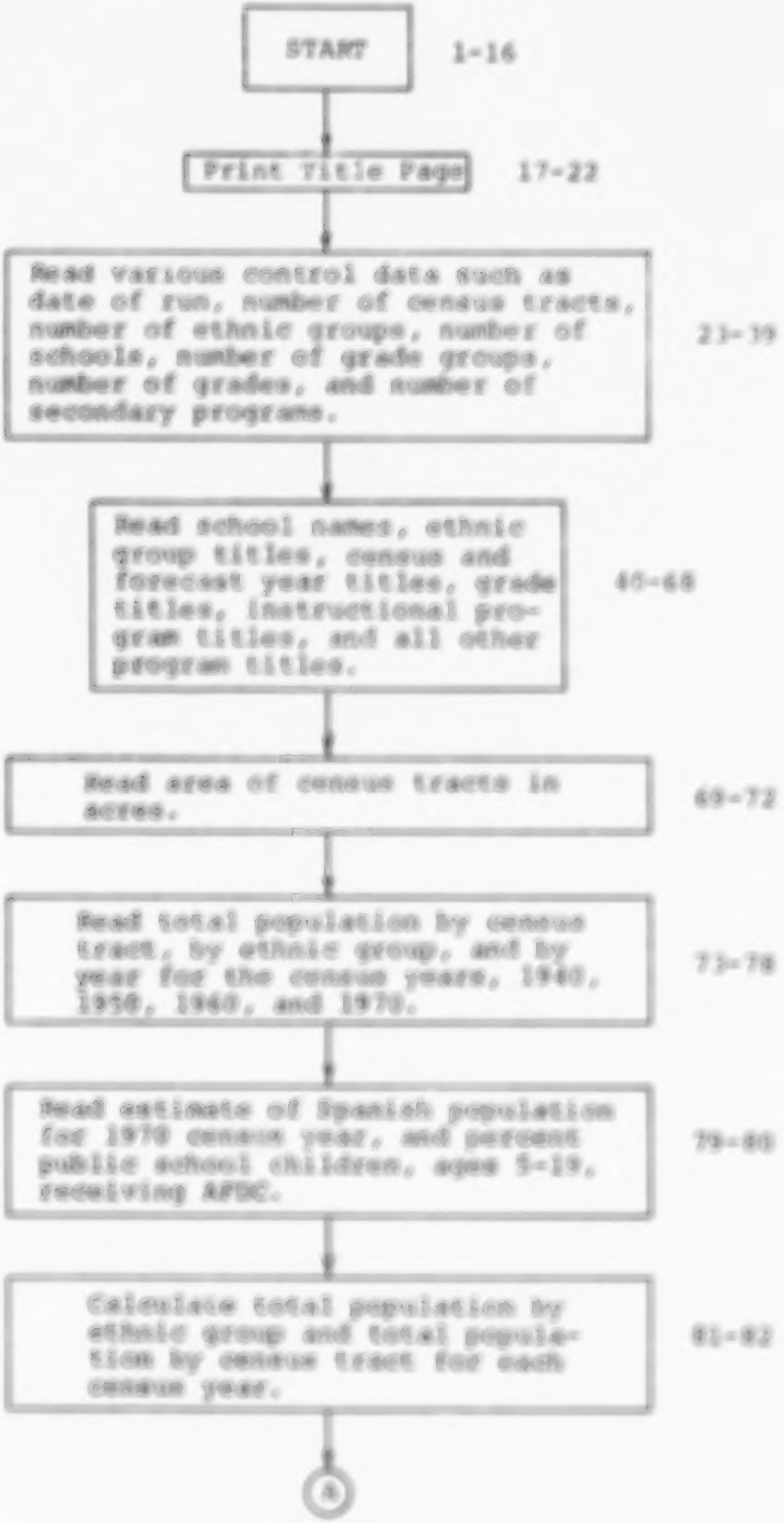
This chapter presents in detail the documentation of the Enrollment Module computer program. Documentation consists of the computer program flowchart, computer program listing, the computer program variable dictionary, and a description of the sample of each output report generated by the program.

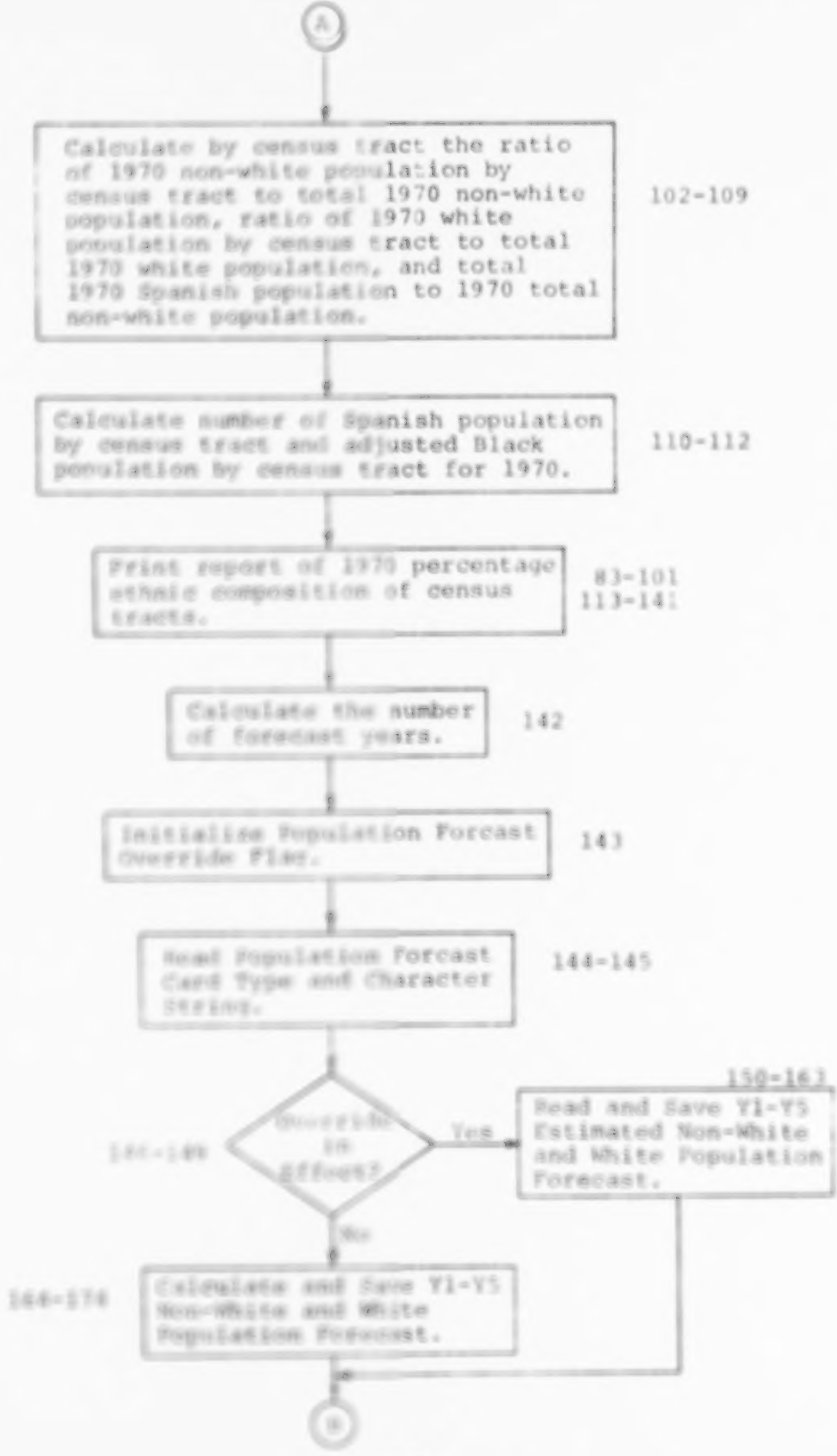
Computer Program Flowchart

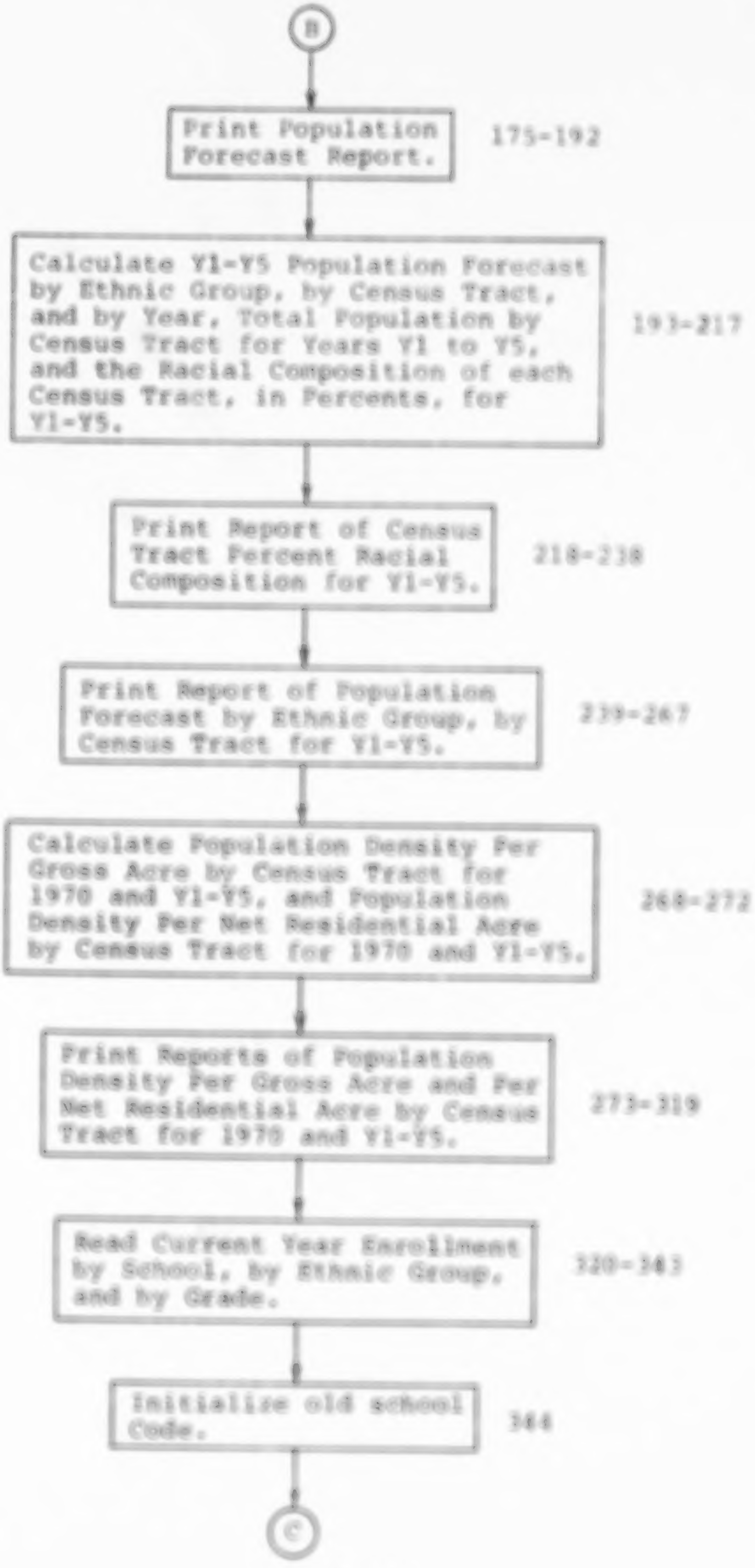
Chart III.2-3 presents a flowchart of the MAIN routine of the ENROLLMENT MODULE computer program, Version I, Model I. The numbers to the right of each box on the chart refer to the statement numbers found on the left margin of the computer program listing following the chart.

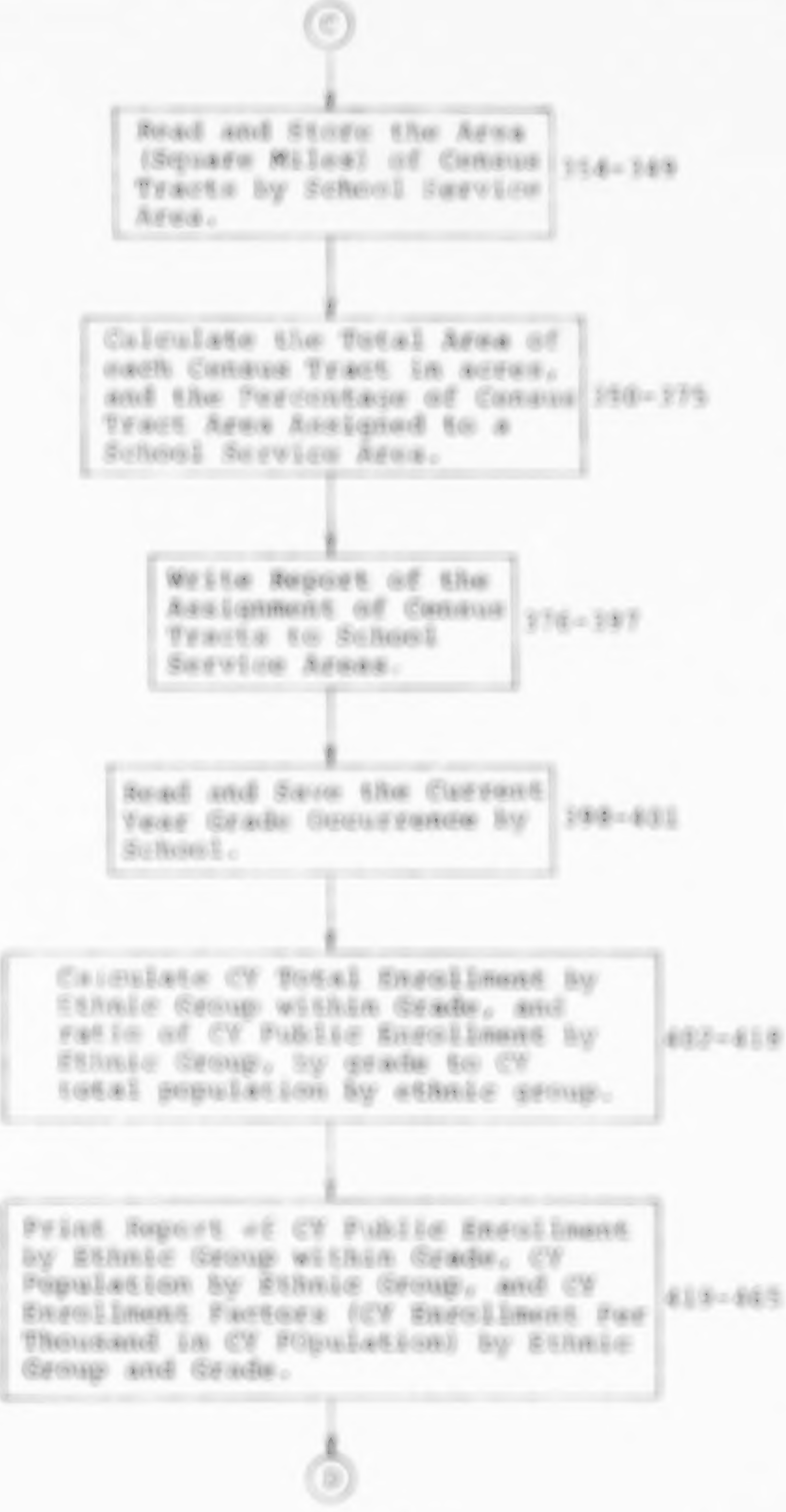
Chart III.2-3

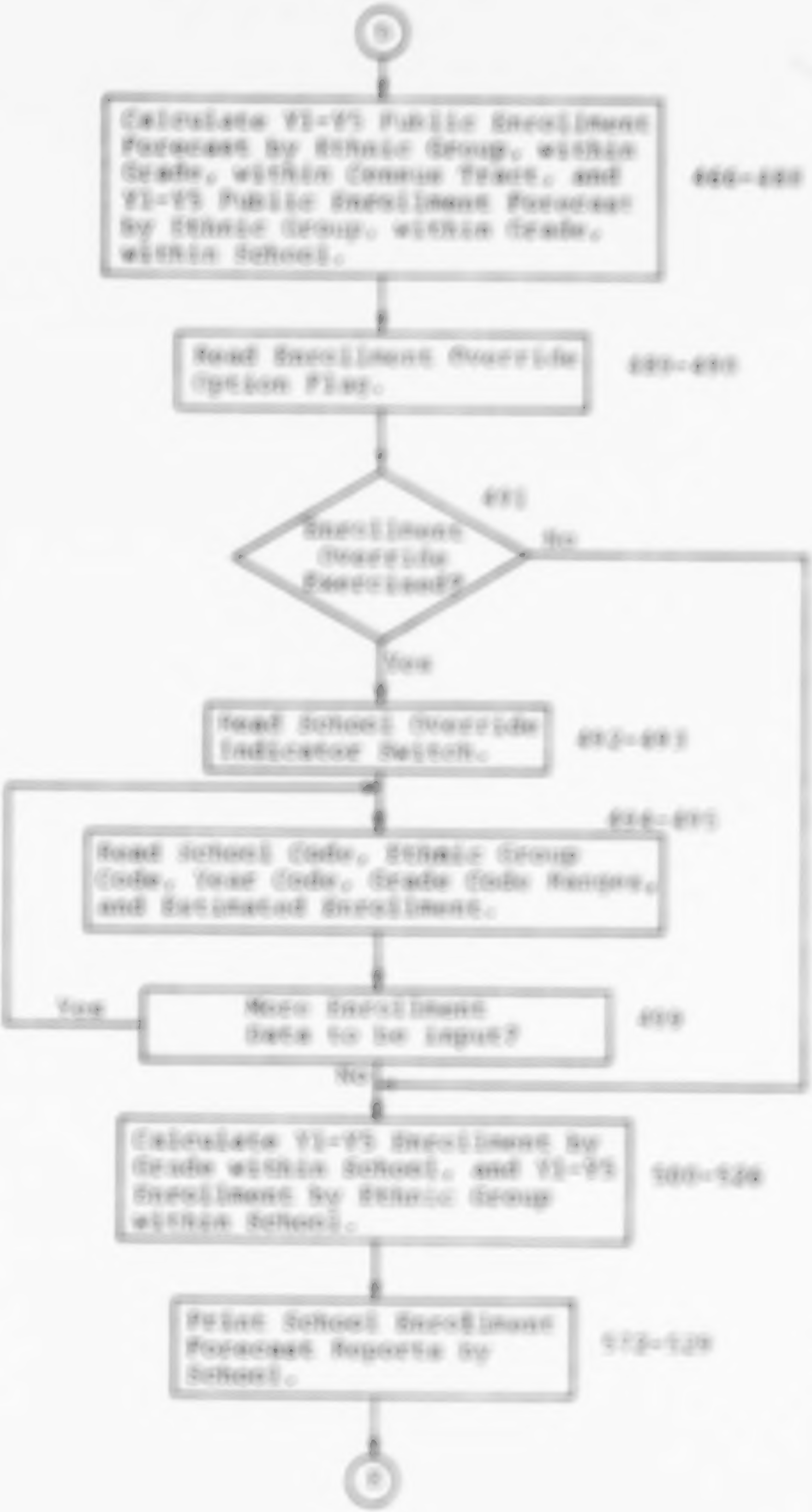
ENROLLMENT MODULE COMPUTER PROGRAM FLOWCHART


START
1-16
Print Title Page
17-22
Read various control data such as date of run, number of census tracts, number of ethnic groups, number of schools, number of grade groups, number of grades, and number of secondary programs.
23-39
Read school names, ethnic group titles, census and forecast year titles, grade titles, instructional program titles, and all other program titles.
40-68
Read area of census tracts in acres.
69-72
Read total population by census tract, by ethnic group, and by year for the census years, 1940, 1950, 1960, and 1970.
73-78
Read estimate of Spanish population for 1970 census year, and percent public school children, ages 5-19, receiving AFDC.
79-80
Calculate total population by ethnic group and total population by census tract for each census year.
81-82
A

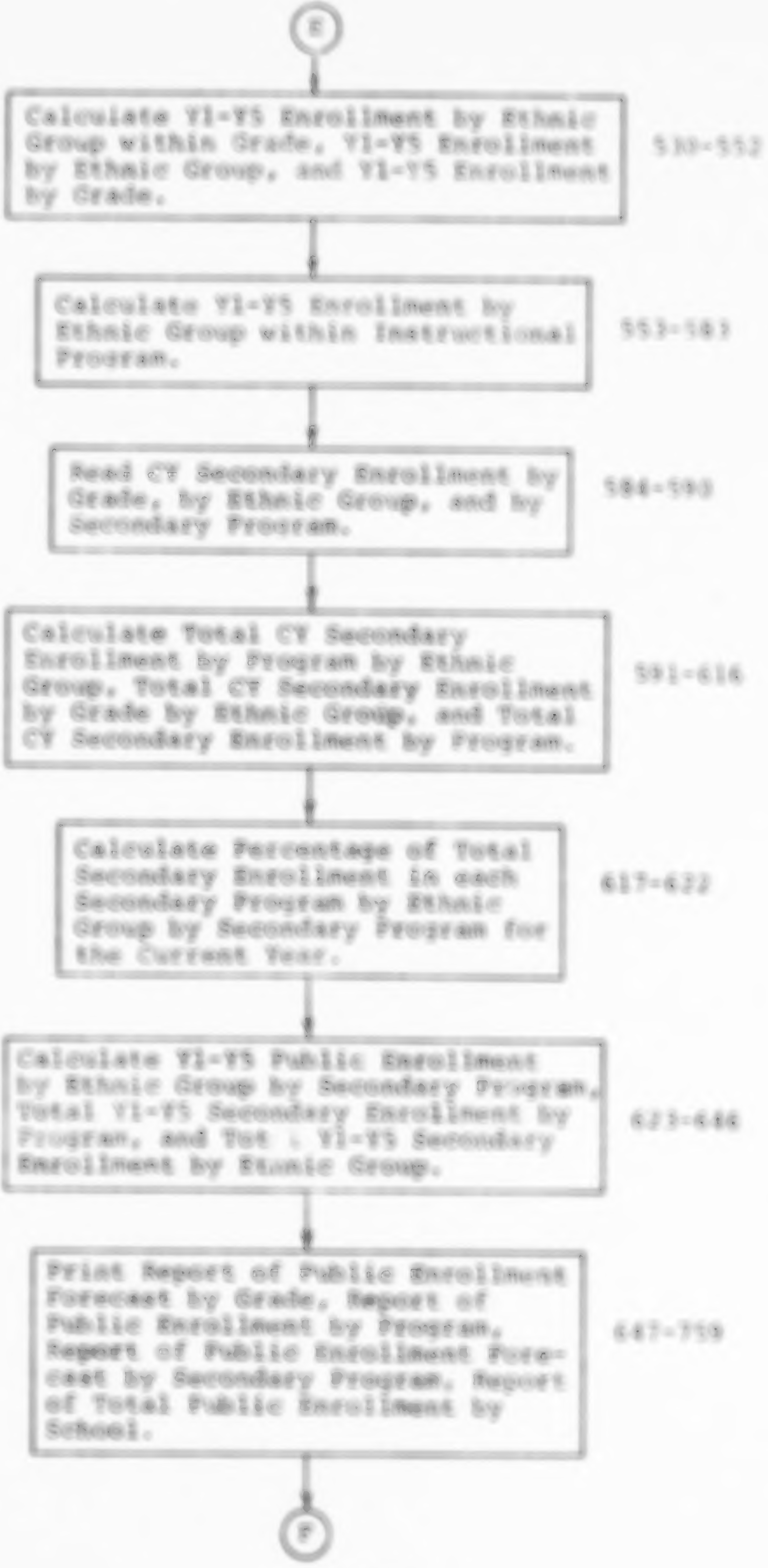

A
Calculate by census tract the ratio of 1970 non-white population by census tract to total 1970 non-white population, ratio of 1970 white population by census tract to total 1970 white population, and total 1970 Spanish population to 1970 total non-white population.
102-109
Calculate number of Spanish population by census tract and adjusted Black population by census tract for 1970.
110-112
Print report of 1970 percentage ethnic composition of census tracts.
83-101
113-141
Calculate the number of forecast years.
142
Initialize Population Forcast Override Flag.
143
Read Population Forcast Card Type and Character String.
144-145
146-149
Override in Effect?
Yes
No
150-163
Read and Save Y1-Y5 Estimated Non-White and White Population Forecast.
164-174
Calculate and Save Y1-Y5 Non-White and White Population Forecast.
B

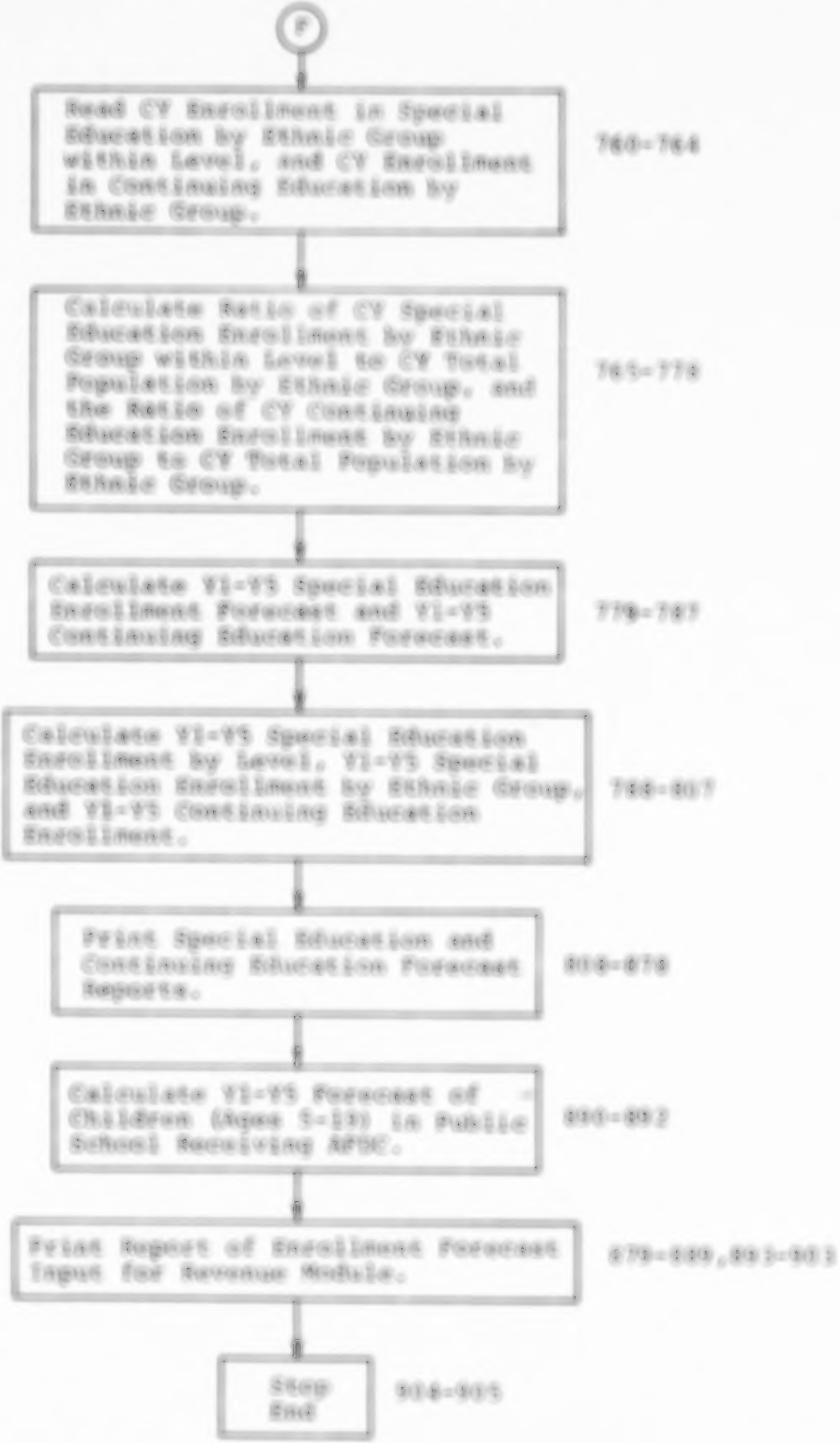

B
Print Population Forecast Report.
175-192
Calculate Y1-Y5 Population Forecast by Ethnic Group, by Census Tract, and by Year, Total Population by Census Tract for Years Y1 to Y5, and the Racial Composition of each Census Tract, in Percents, for Y1-Y5.
193-217
Print Report of Census Tract Percent Racial Composition for Y1-Y5.
218-238
Print Report of Population Forecast by Ethnic Group, by Census Tract for Y1-Y5.
239-267
Calculate Population Density Per Gross Acre by Census Tract for 1970 and Y1-Y5, and Population Density Per Net Residential Acre by Census Tract for 1970 and Y1-Y5.
268-272
Print Reports of Population Density Per Gross Acre and Per Net Residential Acre by Census Tract for 1970 and Y1-Y5.
273-319
Read Current Year Enrollment by School, by Ethnic Group, and by Grade.
320-343
Initialize old school Code.
344
C


C
Read and Store the Area (Square Miles) of Census Tracts by School Service Area.
114-149
Calculate the Total Area of each Census Tract in acres, and the Percentage of Census Tract Area Assigned to a School Service Area.
150-175
Write Report of the Assignment of Census Tracts to School Service Areas.
176-197
Read and Save the Current Year Grade Occurrence by School.
198-401
Calculate CY Total Enrollment by Ethnic Group within Grade, and ratio of CY Public Enrollment by Ethnic Group, by grade to CY total population by ethnic group.
402-418
Print Report of CY Public Enrollment by Ethnic Group within Grade, CY Population by Ethnic Group, and CY Enrollment Factors (CY Enrollment Per Thousand in CY POpulation) by Ethnic Group and Grade.
419-465
D



Calculate Y1-Y5 Public Enrollment Forecast by Ethnic Group, within Grade, within Census Tract, and Y1-Y5 Public Enrollment Forecast by Ethnic Group, within Grade, within School.
Read Enrollment Override Option Flag.
491
Enrollment Override Exercised?
No
Yes
Read School Override Indicator Switch.
492-493
Read School Code, Ethnic Group Code, Year Code, Grade Code Ranges, and Estimated Enrollment.
Yes
More Enrollment Data to be input?
499
No
Calculate Y1-Y5 Enrollment by Grade within School, and Y1-Y5 Enrollment by Ethnic Group within School.
Print School Enrollment Forecast Reports by School.


E
Calculate Y1-Y5 Enrollment by Ethnic Group within Grade, Y1-Y5 Enrollment by Ethnic Group, and Y1-Y5 Enrollment by Grade.
530-552
Calculate Y1-Y5 Enrollment by Ethnic Group within Instructional Program.
553-583
Read CY Secondary Enrollment by Grade, by Ethnic Group, and by Secondary Program.
584-590
Calculate Total CY Secondary Enrollment by Program by Ethnic Group, Total CY Secondary Enrollment by Grade by Ethnic Group, and Total CY Secondary Enrollment by Program.
591-616
Calculate Percentage of Total Secondary Enrollment in each Secondary Program by Ethnic Group by Secondary Program for the Current Year.
617-622
Calculate Y1-Y5 Public Enrollment by Ethnic Group by Secondary Program, Total Y1-Y5 Secondary Enrollment by Program, and Total Y1-Y5 Secondary Enrollment by Ethnic Group.
623-646
Print Report of Public Enrollment Forecast by Grade, Report of Public Enrollment by Program, Report of Public Enrollment Forecast by Secondary Program, Report of Total Public Enrollment by School.
647-759
F


F
Read CY Enrollment in Special Education by Ethnic Group within Level, and CY Enrollment in Continuing Education by Ethnic Group.
760-764
Calculate Ratio of CY Special Education Enrollment by Ethnic Group within Level to CY Total Population by Ethnic Group, and the Ratio of CY Continuing Education Enrollment by Ethnic Group to CY Total Population by Ethnic Group.
765-778
Calculate Y1-Y5 Special Education Enrollment Forecast and Y1-Y5 Continuing Education Forecast.
779-787
Calculate Y1-Y5 Special Education Enrollment by Level, Y1-Y5 Special Education Enrollment by Ethnic Group, and Y1-Y5 Continuing Education Enrollment.
788-807
Print Special Education and Continuing Education Forecast Reports.
808-878
Calculate Y1-Y5 Forecast of Children (Ages 5-13) in Public School Receiving AFDC.
890-892
Print Report of Enrollment Forecast Input for Revenue Module.
879-889,893-903
Stop
End
904-905

Computer Program Listing

The ENROLLMENT MODULE computer program listing is provided on the following pages. The program is written in the FORTRAN IV G-level language. The listing consists of the main routine and several subroutines. A description of the program's MAIN and subroutine sections and their order in the computer listing are as follows:

ROUTINE OR SUBROUTINE	DESCRIPTION	PAGES
MAIN	Forecasts Y1-Y5 enrollments by ethnic group for the following major breaks -- by grade by school, by grade only, by program only, by school only; and for special enrollment categories such as by secondary program, for Special Education, and Continuing Education.	001-021
SUMMY	Aggregates population data across all census tracts to obtain total population by ethnic group by year.	022
SUMCT	Aggregates population data across all ethnic groups to obtain total population by census tract by year.	023
RACOMP	Calculates the racial composition of each census tract in percent.	024
REPORS	Prints the school enrollment forecast reports.	025-026
POPFOR	Calculates the CY and Y1-Y5 total population forecast by ethnic group.	0027-0028

[illegible]

[illegible]

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[illegible]

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 0146              IF(TC.EQ.NBLV) GO TO 402
 0147              IF(TC.EQ.ADVR) GO TO 404
 0148              IF(TC.EQ.PFCR) GO TO 293
 0149              IF(TC.EQ.CNC) GO TO 413
 0150          402 IPCV=1
 0151              DO 412 I=1,6
 0152              J=NYF-I+5
 0153              K=6-I+1
 0154              PCPPTC(1,J)=PLVN(K)
 0155          412 CONTINUE
 0156              GO TO 290
 0157          404 IPOV=1
 0158              DO 414 I=1,6
 0159              J=NYF-I+5
 0160              K=6-I+1
 0161              PCPPTC(2,J)=PCVR(K)
 0162          414 CONTINUE
 0163              GO TO 290
 0164          293 IPERNC=IPERNC+1
 0165              CALL PCPPLR(IPERNO,BUNDT,NYF,YRS,PCPPTC)
 0166          413 WRITE(6,5004)
 0167         5004 FORMAT('1','     POPULATION FORECAST')
               C
               C
               C SAVE FORECASTED POPULATION TOTALS BY ETHNIC
               C GROUP BY FORECAST YEAR IN POP(23,2,Y).
               C
               C
 0168              DO 68 I=1,6
 0169              J=NYF-I+5
 0170              Y=10-I+1
 0171              POP(23,1,Y)=PCPPTC(1,J)
 0172              POP(23,2,Y)=PCPPTC(2,J)
 0173           68 CONTINUE
 0174              IF(IPCV.NE.1) GO TO 426
 0175              WRITE(6,5037)
 0176         5037 FORMAT('0',44X,'OVERRIDE OPTION EXERCISED BY USER')
 0177              WRITE(6,5038) (YRS(Y),Y=5,10)
 0178         5038 FORMAT('0',35X,I4,5(11X,I4))
 0179              WRITE(6,115)
 0180              WRITE(6,5041)(POP(23,1,Y),Y=5,10)
 0181         5041 FORMAT('0',14X,'NON-WHITE',2X,F8.0,5(7X,F8.0))
 0182              WRITE(6,115)
 0183              WRITE(6,5043)(POP(23,2,Y),Y=5,10)
 0184         5043 FORMAT('0',14X,'WHITE',6X,F8.0,5(7X,F8.0))
 0185              GO TO 290
 0186          426 WRITE(6,5047)
 0187         5047 FORMAT('0',8X,'OVERRIDE OPTION NOT IN EFFECT-POPULATION FORECAST C
                  1OMPLETED')
 0188              WRITE(6,5038) (YRS(Y),Y=5,10)
 0189              WRITE(6,115)
 0190              WRITE(6,5041)(POP(23,1,Y),Y=5,10)
 0191              WRITE(6,115)
 0192              WRITE(6,5043)(POP(23,2,Y),Y=5,10)
               C
               C
               C COMPUTE THE POPULATION FORECAST
               C BY ETHNIC GROUP BY CENSUS TRACT
               C FOR THE CURRENT YEAR AND FORECAST YEARS.
               C
               C
```

```
FORTRAN IV G LEVEL  21                MAIN           DATE = [illegible]      [illegible]          PAGE [illegible]

[illegible]       [illegible]
[illegible]       [illegible] CONTINUE
[illegible]       [illegible] CONTINUE
      C
      C
      C [illegible]
      C
      C
[illegible]       [illegible] CONTINUE
      C
      C
      C [illegible]
      C
      C
[illegible]            CALL [illegible]
      C
      C CALL [illegible]
      C [illegible]
      C
[illegible]            CALL [illegible]
      C
      C
[illegible]            CALL [illegible]
      C
      C
      C [illegible]
      C
[illegible]       [illegible] CONTINUE
[illegible]       [illegible] CONTINUE
[illegible]       [illegible] CONTINUE
      C
      C [illegible]
      C
[illegible]            [illegible]
```

```
[illegible]
      [illegible]
      FORMAT(" ",*SOURCE-CITY OF TRENTON, DEPT. OF PLANNING")
      [illegible]
      FORMAT(" ",* DENSITY CALCULATED USING [illegible]")
      [illegible]
      FORMAT(" ",* RESIDENTIAL ACREAGE BY [illegible]")
C
C INITIALIZE ARRAY [illegible] STORES ENROLLMENT DATA BY SCHOOL,GRADE,
C RACE AND SE.
C
      DO 40 I=1,[illegible]
      DO 40 J=1,[illegible]
      DO 50 K=1,[illegible]
      DO 50 K=1,[illegible]
      [illegible] = 0.0
```

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[illegible]
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FORTRAN IV G LEVEL 21          MAIN          DATE = [illegible]          [illegible]          PAGE [illegible]
[illegible]
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[illegible]

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[illegible]
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[illegible]
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[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] ENROLLMENT PERCENT BY GRADE LEVEL
[illegible]
```

[illegible]

```
 0797              DO 888 R=1,3
 0798              STOTP(L,4,Y)=STOTP(L,4,Y) +STOTP(L,R,Y)
 0799          888 CONTINUE
              C
              C
              C AGGREGATE CY-Y5 SPEC. ED ENR. FORECAST BY ETHNIC
              C GROUP BY YR(ACROSS LEVELS).
              C
 0800              DO 908 R=1,4
 0801              DO 907 Y=1,6
 0802              STOTP(3,R,Y)=0.0
 0803              DO 906 L=1,2
 0804              STOTP(3,R,Y)=STOTP(3,R,Y) + STOTP(L,R,Y)
 0805          906 CONTINUE
 0806          907 CONTINUE
 0807          908 CONTINUE
              C
              C
              C PRINT SPECIAL EDUCATION AND CONTINUING EDUCATION
              C FORECAST REPORTS.
              C
              C
 0808              IREPNO=IREPNO + 1
 0809              WRITE(6,55) IREPNO
 0810              WRITE(6,909)RUNDT
 0811          909 FORMAT(' ',42X,'PUBLIC ENROLLMENT FORECAST FOR SPECIAL EDUCATION',
                  120X,'RUN DATE:',3A4)
 0812              WRITE(6,911)
 0813          911 FORMAT('0',' ENROLLMENT FACTORS: SPECIAL EDUCATION ENROLLMENT FACT
                  1OR PER THOUSAND')
 0814              WRITE(6,962) YRS(5)
 0815          962 FORMAT(' ',21X,'IN POPULATION BY ETHNIC GROUP FOR THE CY',2X,I4)
 0816              WRITE(6,115)
 0817              WRITE(6,913)((ETHNIC(R,J),J=1,2),R=1,3)
 0818          913 FORMAT('0',9X,'LEVEL',20X,2A4,10X,2A4,14X,2A4)
 0819              DO 964 R=1,3
 0820              DO 966 L=1,2
 0821              EFAC(L,R)= EFAC(L,R)*100.
 0822          966 CONTINUE
 0823          964 CONTINUE
 0824              WRITE(6,968)(EFAC(1,R),R=1,3)
 0825          968 FORMAT('0',11X,'ELEMENTARY',8X,F10.3,2(10X,F10.3))
 0826              WRITE(6,917)(EFAC(2,R),R=1,3)
 0827          917 FORMAT('0',11X,'SECONDARY',9X,F10.3,2(10X,F10.3))
 0828              WRITE(6,115)
 0829              WRITE(6,115)
 0830              WRITE(6,969)
 0831          969 FORMAT('0',' ENROLLMENT FORECAST')
 0832              WRITE(6,919) (YRS(Y),Y=5,10)
 0833          919 FORMAT('0','  LEVEL',12X,'ETHNIC GROUP',6X,I4,5(10X,I4))
 0834              DO 979 R=1,4
 0835              IF(R.NE.1) GO TO 972
 0836              WRITE(6,921)(ETHNIC(R,J),J=1,2),(STOTP(1,R,Y),Y=1,6)
 0837          921 FORMAT('0','   ELEMENTARY',7X,2A4,8X,F5.0,5(9X,F5.0))
 0838              GO TO 979
 0839          972 WRITE(6,923)(ETHNIC(R,J),J=1,2),(STOTP(1,R,Y),Y=1,6)
 0840          923 FORMAT(' ',20X,2A4,8X,F5.0,5(9X,F5.0))
 0841          979 CONTINUE
 0842              DO 929 R=1,4
 0843              IF(R.NE.1) GO TO 927
 0844              WRITE(6,976) (ETHNIC(R,J),J=1,2),(STOTP(2,R,Y),Y=1,6)
```

```
  0845              976 FORMAT('0','   SECONDARY',8X,2A4,8X,F5.0,5(9X,F5.0))
  0846                  GO TO 929
  0847              927 WRITE(6,923)(ETHNIC(K,J),J=1,2),(STCTP(2,K,Y),Y=1,6)
  0848              929 CONTINUE
  0849                  DO 939 K=1,4
  0850                  IF(K.NE.1) GO TO 982
  0851                  WRITE(6,931)(ETHNIC(K,J),J=1,2),(STCTP(3,K,Y),Y=1,6)
  0852              931 FORMAT('0','   TOTAL',12X,2A4,8X,F5.0,5(9X,F5.0))
  0853                  GO TO 939
  0854              982 WRITE(6,923)(ETHNIC(K,J),J=1,2),(STOTP(3,K,Y),Y=1,6)
  0855              939 CONTINUE
              C
              C
              C
  0856                  IREPNO=IREPNO + 1
  0857                  WRITE(6,95) IREPNO
  0858                  WRITE(6,933)RUNDT
  0859              933 FORMAT(' ',40X,'PUBLIC ENROLLMENT FORECAST FOR CONTINUING EDUCATIO
                       1N',20X,'RUN DATE:',3A4)
  0860                  WRITE(6,984)
  0861              984 FORMAT('0','CONTINUING EDUCATION ENROLLMENT FACTOR BY ETHNIC')
  0862                  WRITE(6,986) YRS(5)
  0863              986 FORMAT(' ','GROUP PER THOUSAND IN THE POPULATION FOR CY',2X,I4)
  0864                  WRITE(6,115)
  0865                  WRITE(6,937)((ETHNIC(K,J),J=1,2),K=1,3)
  0866              937 FORMAT('0',34X,2A4,10X,2A4,14X,2A4)
  0867                  DO 988 K=1,3
  0868                  GRADEF(1,K)= GRADEF(1,K)*100.
  0869              988 CONTINUE
  0870                  WRITE(6,999)(GRADEF(1,K),K=1,3)
  0871              999 FORMAT('0',29X,F10.3,2(10X,F10.3))
  0872                  WRITE(6,969)
  0873                  WRITE(6,941) (YRS(Y),Y=5,10)
  0874              941 FORMAT('0',20X,'ETHNIC GROUP',8X,I4,5(10X,I4))
  0875                  DO 994 K=1,4
  0876                  WRITE(6,992) (ETHNIC(K,J),J=1,2), (CENED(Y,K),Y=1,6)
  0877              992 FORMAT('0',20X,2A4,11X,F5.0,5(9X,F5.0))
  0878              994 CONTINUE
  0879                  IREPNO=IREPNO+1
  0880                  WRITE(6,95) IREPNO
  0881                  WRITE(6,383)
  0882              383 FORMAT('0','ENROLLMENT FORECAST INPUT FOR REVENUE SIMULATOR')
  0883                  DO 7000 Y=1,6
  0884                  TI(Y)=0.0
  0885             7000 CONTINUE
  0886                  DO 384 Y=1,6
  0887                  DO 384 P=2,3
  0888                  TI(Y)=TI(Y)+SUBPR(P,4,Y)
  0889              384 CONTINUE
  0890                  DO 386 Y=1,6
  0891                  AFCC(Y)=SUBGR(15,4,Y)*CCPCT
  0892              386 CONTINUE
  0893                  WRITE(6,387) (YRS(Y),Y=5,10)
  0894              387 FORMAT('0',35X,I4,5(6X,I4))
  0895                  WRITE(6,388)(PROGNM(11,J),J=1,6),(SUBGR(2,4,Y),Y=1,6)
  0896              388 FORMAT('0',3X,6A4,1X,6(2X,F8.0))
  0897                  WRITE(6,388) (PROGNM(12,J),J=1,6),(TI(Y),Y=1,6)
  0898                  WRITE(6,388) (PROGNM(13,J),J=1,6),(SUBPR(4,4,Y),Y=1,6)
  0899                  WRITE(6,388) (PROGNM(14,J),J=1,6),SEC1(1),(SECFOR(1,4,Y),Y=1,5)
  0900                  WRITE(6,388) (PROGNM(15,J),J=1,6),SEC1(2),(SECFOR(2,4,Y),Y=1,5)
```

```
      0901               WRITE(6,388) (PROGNM(16,J),J=1,6),(CONED(Y,4),Y=1,6)
      0902               WRITE(6,388) (PROGNM(17,J),J=1,6),(STCTP(3,4,Y),Y=1,6)
      0903               WRITE(6,388) (PROGNM(18,J),J=1,6),(AFDC(Y),Y=1,6)
      0904               STOP
      0905               END
```

```
0001                 SUBROUTINE SUMRY(A,KL,KU)
0002                 DIMENSION A(23,4,6)
0003                 COMMON    SUBCR(15,4,6),GRADEF(14,3),EFURG(22,14,3,5),PROGNM(19,6)
0004                 COMMON PCTRAC(23,4,10),ENR(22,15,4,6),SUBPR(6,4,6)
0005                 COMMON NAMES(25,5),ETHNIC(4,2),PCP(23,4,10)
0006                 COMMON     RCNDT(3),CTPTS(22,25),GRGRPS(5,2)
0007                 COMMON    SECENR(5,4,3),PSECAP(4,3),GRADES(15,2),SECFCR(5,4,5)
0008                 COMMON STOTP(5,3,6),SECT(5),EFAC(14,3),IREPNO
0009                 INTEGER NCCT,NCR,NCYRS,NSCH,NCGG,C,R,Y,S,G,P,IG(14),IP(5)
0010                 INTEGER GGGCC(25,14),SL,SU,PL,PU,NCG,GL,GU,YRS(10)
0011                 DO 15 Y=KL,KU
0012                 DO 10 R=1,3
0013                 DO  5 C=1,22
0014                 A(23,R,Y)= A(23,R,Y) + A(C,R,Y)
0015               5 CONTINUE
0016              10 CONTINUE
0017              15 CONTINUE
0018                 RETURN
0019                 END
```

```
      SUBROUTINE SUMCT(A,KL,KU)
      DIMENSION A(23,4,6)
      COMMON    SCBOR(15,4,6),GRADEF(14,3),EFLRG(22,14,3,5),PROGNM(19,6)
      COMMON PCTRAC(23,4,10),ENR(28,15,4,6),SUBPR(6,4,6)
      COMMON NAMES(23,5),ETHNIC(4,2),POP(23,4,10)
      COMMON    ACRET(3),CTPTS(22,25),GRGRPS(5,2)
      COMMON    SECENR(5,4,3),PSECRP(4,3),GRADES(15,2),SECFOR(5,4,5)
      COMMON STCTP(5,3,6),SECT(5),EFACT(14,3),IREPNO
      INTEGER NCCT,NCR,NGYRS,NSCH,NCGG,C,R,Y,S,G,P,IG(14),IP(5)
      INTEGER GGJCC(23,14),SL,SU,PL,PU,NCG,GL,GU,YRS(10)
      DO 30 Y=KL,KU
      DO 25 C=1,23
      DO 20 R=1,3
      A(C,4,Y) = A(C,4,Y) + A(C,R,Y)
   20 CONTINUE
   25 CONTINUE
   30 CONTINUE
      RETURN
      END
```

```
                  SUBROUTINE RACCMP(KL,KU)
                  COMMON    SUBCR(15,4,6),GRADEF(14,3),EFCRG(22,14,3,5),PRCGNM(19,6)
                  COMMON PCTRAC(23,4,10),ENR(26,15,4,6),SUBPR(6,4,6)
                  COMMON RATES(25,5),ETHNIC(4,2),PCP(23,4,10)
                  COMMON    MCNDT(3),CTPTS(22,25),GRGRPS(5,2)
                  COMMON    SECENR(5,4,3),PSECRF(4,3),GRADES(15,2),SECFOR(5,4,5)
                  COMMON STCTP(5,3,6),SEC1(5),EFAC(14,3),IREPNC
                  INTEGER NOCT,NCR,NCYRS,NSCH,NCGG,C,R,Y,S,G,P,IG(14),IP(5)
                  INTEGER GOCCC(25,14),SL,SU,PL,PU,NCG,GL,GU,YRS(10)
                  DO 60 Y=KL,KU
                  DO 55 R=1,3
                  DO 50 C=1,22
                  IF(POP(C,4,Y).EQ.0.0) GO TO 50
                  PCTRAC(C,R,Y)= PCP(C,R,Y)/POP(C,4,Y)
               50 CONTINUE
               55 CONTINUE
               60 CONTINUE
                  RETURN
                  END
```

```
      C SUBROUTINE REPORS GENERATES ENROLLMENT FORECAST REPORTS BY SCHOOL.
      C FOR ELEMENTARY SCHOOLS:S=1,19:G=1,8:P=1,3. FOR JUNIOR HIGHS:S=20,24:
      C G=9,11:P=4,4.FOR SR. HIGH:S=25,25:G=12,14,P=5,5.
            SUBROUTINE REPORS(SL,SU,GL,GU,PL,PU,YRS,MM,IA)
            DIMENSION IA(24)
            COMMON    SUBCR(15,4,6),GRADEF(14,3),EFORG(22,14,3,5),PROGNM(19,6)
            COMMON PCTRAC(23,4,10),ENR(26,15,4,6),SUBPR(6,4,6)
            COMMON NAMES(25,5),ETHNIC(4,2),PCF(23,4,10)
            COMMON    RUNDT(3),CTPTS(22,25),GRGRPS(5,2)
            COMMON    SECENR(5,4,3),PSECFF(4,3),GRADES(15,2),SECFOR(5,4,5)
            COMMON STOTP(5,3,6),SEC1(5),EFAC(14,3),IREPNO
            INTEGER NCCT,NCR,NOYRS,NSCH,NCGG,C,R,Y,S,G,P,IG(14),IP(5)
            INTEGER GGOCC(25,14),SL,SU,PL,PU,NCG,GL,GU,YRS(10)
            INTEGER ENDV
            DATA IG/1,1,2,2,2,3,3,3,4,4,4,5,5,5/
            DO 100 S=SL,SU
            IREPNO=IREPNO+1
            DO 728 P=1,5
            DO 726 R=1,3
            DO 724 Y=1,6
            STOTP(P,R,Y)=0.0
        724 CONTINUE
        726 CONTINUE
        728 CONTINUE
            WRITE(6,95) IREPNO
         95 FORMAT('1',53X,'TRENTON SCHOOL DISTRICT',33X,'REPORT NO. TSDENR-',
           1I4)
            WRITE(6,545) RUNDT
        545 FORMAT(' ',35X,'ENROLLMENT FORECAST BY ETHNIC GROUP WITHIN GRADE
           -AND SCHOOL',14X,'RUN DATE:',3A4)
            WRITE(6,505)
        505 FORMAT('0')
            IF(MM-1) 33,38,33
         38 IF(IA(S).NE.1) GO TO 33
            WRITE(6,42)
         42 FORMAT('0','INPUT OVERRIDE EXERCISED-USER REVISION')
            WRITE(6,44)
         44 FORMAT(' ','TO ENROLLMENT FORECAST FOR THIS SCHOOL')
         33 WRITE(6,550) (NAMES(S,J),J=1,5)
        550 FORMAT(' ',' SCHOOL:  ',5A4)
            WRITE(6,555) (YRS(Y),Y=5,10)
        555 FORMAT('0','   GRADE        ETHNIC GROUP',12X,I4,5(11X,I4))
            WRITE(6,505)
            DO 5 G=GL,GU
            DO 1 R=1,4
            IF(R.NE.1) GO TO 2
            WRITE(6,560) (GRADES(G,J),J=1,2),(ETHNIC(R,J),J=1,2),
           -(ENR(S,G,R,Y),Y=1,6)
        560 FORMAT(' ',4X,2A4,6X,2A4,10X,F7.0,5(8X,F7.0))
            GO TO 1
          2 WRITE(6,565) (ETHNIC(R,J),J=1,2),(ENR(S,G,R,Y),Y=1,6)
        565 FORMAT(' ',18X,2A4,10X,F7.0,5(8X,F7.0))
          1 CONTINUE
          5 CONTINUE
            DO 569 R=1,3
            IF(R.NE.1) GO TO 8
            WRITE(6,566) (ETHNIC(4,J),J=1,2),(ETHNIC(R,J),J=1,2),
           -(ENR(S,15,R,Y),Y=1,6)
        566 FORMAT('0',2X,2A4,6X,2A4,10X,F7.0,5(8X,F7.0))
            GO TO 569
          8 WRITE(6,565) (ETHNIC(R,J),J=1,2),(ENR(S,15,R,Y),Y=1,6)
      0055           569 CONTINUE
      0056               DO 716 Y=1,6
      0057               DO 714 R=1,3
      0058               DO 710 G=GL,GU
      0059               P=IG(G)
      0060               STCTP(P,R,Y)=STCTP(P,R,Y)+ENR(S,G,R,Y)
      0061           710 CONTINUE
      0062           714 CONTINUE
      0063           716 CONTINUE
      0064               DO 722 P=PL,PU
      0065               DO 720 R=1,3
      0066               IF(R.NE.1) GO TO 718
      0067               WRITE(6,566) (GRGRPS(P,J),J=1,2),(ETHNIC(R,J),J=1,2),
                        -(STCTP(P,R,Y),Y=1,6)
      0068               GO TO 720
      0069           718 WRITE(6,565) (ETHNIC(R,J),J=1,2),(STCTP(P,R,Y),Y=1,6)
      0070           720 CONTINUE
      0071           722 CONTINUE
      0072           100 CONTINUE
      0073               RETURN
      0074               END
```

```
              SUBROUTINE POPFOR(IREPNO,RUNDT,NYF,YRS,POPFTD)
              INTEGER YRS
              DIMENSION YRS(10),POPFTD(2,20),X(4),RUNDT(3)
              WRITE(6,50)IREPNO,(RUNDT(I),I=1,3)
       50     FORMAT('1',53X,'TRENTON SCHOOL DISTRICT',33X,'REPORT NO. TSDENR-',
             1I4/' ',8X,'POPULATION FORECASTING BY TIME TREND',65X,
             2'RUN DATE:',3A4)
              X(1)=0.0
              SX=0.0
              SX2=0.0
              DO 1 I=2,4
              X(I)=X(I-1)+10.0
              SX=SX+X(I)
        1     SX2=SX2+(X(I)*X(I))
              DO 2 I=1,2
              IF(I.EQ.1)WRITE(6,51)
       51     FORMAT('0','NON-WHITE POPULATION IS FORECASTED BY A CONSTANT PERCE
             1NT TIME TREND')
              IF(I.EQ.2)WRITE(6,52)
       52     FORMAT('0','WHITE POPULATION IS FORECASTED BY A CONSTANT ABSOLUTE
             1INCREMENT TIME TREND')
              SY=0.0
              SXY=0.0
              DO 3 J=1,4
              IF(I.EQ.1)Y=ALOG(POPFTD(1,J))
              IF(I.EQ.2)Y=POPFTD(2,J)
              SY=SY+Y
        3     SXY=SXY+(X(J)*Y)
              B=(4.0*SXY-SX*SY)/(4.0*SX2-(SX*SX))
              A=(SY-B*SX)/4.0
              IF(I.EQ.2)GO TO 4
              GP=(EXP(B )-1.0)*100.0
              WRITE(6,53)GP
       53     FORMAT('0','ESTIMATED NON-WHITE YEARLY PERCENT CHANGE: ',F6.1)
              GO TO 5
        4     WRITE(6,54)B
       54     FORMAT('0','ESTIMATED WHITE YEARLY ABSOLUTE CHANGE :',F10.1)
        5     WRITE(6,55)
       55     FORMAT('0','A COMPARISON BETWEEN THE ACTUAL POPULATION AND THE TIM
             1E TREND FOR THE CENSUS YEARS')
              IF(I.EQ.1)WRITE(6,56)
       56     FORMAT('0',17X,'NON-WHITE',8X,'NON-WHITE',17X,'PERCENT')
              IF(I.EQ.2)WRITE(6,57)
       57     FORMAT('0',17X,'WHITE',12X,'WHITE',21X,'PERCENT')
              WRITE(6,58)
       58     FORMAT(' ','CENSUS YEAR',3X,'ACTUAL POPULATION',3X,'TIME TREND',
             13X,'DIFFERENCE',3X,'ERROR'/' ',11('-'),3X,17('-'),3X,10('-'),
             23X,10('-'),3X,7('-'))
              DO 6 J=1,4
              F=A+(B*X(J))
              IF(I.EQ.1)F=EXP(F)
              D=POPFTD(I,J)-F
              PE=(D/POPFTD(I,J))*100.0
        6     WRITE(6,59)YRS(J),POPFTD(I,J),F,D,PE
       59     FORMAT('0',3X,I4,10X,F10.0,7X,F10.0,3X,F10.0,4X,F6.1)
              WRITE(6,60)
       60     FORMAT('0','FORECASTS BASED ON TIME TREND')
              IF(I.EQ.1)WRITE(6,61)
       61     FORMAT('0',17X,'NON-WHITE')
              IF(I.EQ.2)WRITE(6,62)
       62     FORMAT('0',17X,'WHITE')
```

```
  0055                 WRITE(6,63)
  0056         63      FORMAT(' ',3X,'YEAR',7X,'FORECASTED POPULATION'/' ',3X,4('-'),7X,
                      121('-'))
  0057                 K=YRS(4)
  0058                 F=A+(B*X(4))
  0059                 JJ=4
  0060                 DO 7 J=1,NYF
  0061                 K=K+1
  0062                 F=F+B
  0063                 JJ=JJ+1
  0064                 IF(I.EQ.1)POPFTD(1,JJ)=EXP(F)
  0065                 IF(I.EQ.2)POPFTD(2,JJ)=F
  0066          7      WRITE(6,64)K,POPFTD(I,JJ)
  0067         64      FORMAT('0',3X,I4,10X,F10.0)
  0068          2      CONTINUE
  0069                 RETURN
  0070                 END
```

VARIABLE DICTIONARY FOR ENROLLMENT MODULE (EXCEPT POPFOR)

The variable names used in the ENROLLMENT MODULE MAIN Program and subroutines, with the exception of subroutine POPFOR, are define in the list below. A separate variable dictionary is provided for POPFOR immediately following this section. The use of the variable dictionary in conjunction with the commented program listing will provide the user with an understanding of intenal computer program processing.

Variable	Definition
AFDC(Y)	Variable used to store data relative to public school children receiving Aid For Dependent Children. Y=1 through Y=6 represents CY and Y1-Y5 estimates of the number of public school children receiving AFDC.
C	Index used to denote a census tract. C=1 represents census tract 1, C=2 represents census tract 2, etc. C=23 represents population totals by ethnic group across all census tracts.
CONED(Y,R)	Continuing Education enrollment. Subscript Y ranges over years, and subscript R ranges over ethnic groups. Subscript R=4 represents Total Continuing Education enrollment by year. Y=1 is CY Continuing Education enrollment. Y=2 to Y=6 represents Y1-Y5 Continuing Education enrollment forecast by ethnic group.
CT	Census tract number.
CTPTS(C,S)	Assignment in percent of a census tract to a school service area, based upon area. Subscript C ranges across census tracts. Subscript S ranges over schools in the district.
DCPCT	Percentage of public school children (ages 5-19) receiving Aid For Dependent Children in the current year.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
EFAC(G,R)	Variable used to calculate and story the following during the course of computer processing: (1) Percent CY public enrollment by ethnic group and by grade to CY total population by ethnic group. Subscript G ranges over grades and subscript R ranges over ethnic groups. (2) CY Special Education enrollment by ethnic group within level per 1000 in the CY total population by ethnic group. Subscript G ranges over levels and subscript R ranges over ethnic groups. L=1 represents elementary level and L=2 represents the secondary level.
EFORG(C,G,R,Y)	Public enrollment forecast by ethnic group and by grade within census tract. Subscript C ranges over census tracts, subscript G ranges over grades, subscript R ranges over ethnic grades, and subscript Y ranges over years.
ENOV	School enrollment forecast override flag. ENOV equals 0 represents no enrollment forecast override. ENVO equals 1 indicates that the enrollment override option is being exercised.
ENR(S,G,R,Y)	School enrollment data. Subscript S ranges over the schools in the school district. Subscript G ranges over grades in the school denoted by Subscript S. Subscript R ranges over the ethnic groups in the grade and school denoted by the subscript G and S. Subscript Y ranges over the years. Y=1 represents the CY and Y=2 through Y=6 represents the Y1-Y5 enrollment forecast by ethnic group within grade within school.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
ETHNIC(N,J)	Variable used to store the names of the ethnic groups for which enrollment forecasts are to be made. Subscript N ranges over the ethnic group titles. Subscript J ranges over the locations necessary to store the characters in each ethnic group title.
G	Index used to denote a grade. G=1 represents Pre-Kindergarten, G=2 represents Kindergarten, G=3 represents 1st grade, G=4 represents 2nd grade, etc. G=15 represents total enrollment (across all grades).
GGOC(S,G)	Grade occurrence flag. Subscript S ranges over schools. Subscript G ranges over grades. If the value of GGOC(S,G) is 0, the grade represented by the position of the particular G in the list does not occur at School S. If the value is 1, the opposite is true.
GL	Temporary index representing the lower index value for the grade subscript G.
GRADEF(G,R)	Variable used to calculate and store the following during the course of computer processing: (1) CY public enrollment by ethnic group within grade per 1000 in the CY total population by ethnic group. Subscript G ranges over grades, and Subscript R ranges over ethnic groups. (2) CY Continuing Education enrollment by ethnic group per 1000 in the CY total population by ethnic group. Continuing Education data stored in GRADEF(1,R), where Subscript R ranges over ethnic groups.
GRADES(G,J)	Variable used to store the grade titles. Subscript G ranges over the various grade titles. Subscript J ranges over the locations necessary to store the characters in the grade title.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
GRGRPS(P,J)	Variable used to store the grade group titles corresponding to the instructional program titles. Subscript P ranges over the grade groups. Subscript J ranges over the locations necessary to store the characters of the grade group title.
GU	Temporary index representing the upper index value for the grade subscript G.
IA(S)	Enrollment override flag by school. Subscript S ranges over schools. See variable ISCOVR(S) for further details.
IG(G)	Variable used to store the program to which a grade belongs. Subscript G ranges over grades. For example, IG(1) and IG(2) both equal 1 thereby representing grades PK and K as being in program 1 or the Early Childhood program.
IP(P)	Variable used to store the school level, elementary or secondary, to which a program belongs. Subscript P ranges over programs. For example, IP(1)=1, IP(2)=1, and IP(3)=1 which represent the fact that the Early Childhood, Elementary and Primary programs are at the elementary school level.
IPOV	Population override flag. IPOV=0 means to calculate the population forecast, and IPOV=1 represents bypass the population forecast calculation, and input Y1-Y5 population estimates by ethnic group.
IREPNO	Report number.
ISCOVR(S)	Enrollment override flag by school. Subscript S ranges over schools. S(1)=1 indicates that an enrollment forecast override is in effect for schools Code 1.S(2)=0 represents calculated forecast for school code 2, etc.
J	Temporary index.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
JJ	Temporary index.
K	Temporary index.
KK	Temporary variable used to store the number of grades in the district plus 1.
KL	Temporary index used to denote the lower value for the year subscript Y.
KU	Temporary index used to denote the upper value for the year subscript Y.
LL	Temporary index used to denote an instructional program area. See the definition of the variable P for further details.
MM	Enrollment override flag. See variable ENOV for additional details.
NAMES(N,J)	Variable used to store the names of schools in the district. Subscript N ranges over the names of the schools. Subscript J ranges over the locations necessary to store the characters in each school name.
NELS	Number of elementary schools.
NJHS	Number of junior high schools.
NN	School count.
NOCT	Total number of census tracts in the school district used for enrollment forecasting purposes.
NOG	Total number of grades taught in the district.
NOGG	Total number of instructional program or grade groups.
NOR	Total number of ethnic groups for which enrollments are forecast.
NOS	School number of code.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
NOYRS	Number of census years plus the current year plus the number of forecast years (4+1+5=10).
NPN	Total number of program names to be input and stored in PRØGNM(P,J).
NSCH	Total number of schools in the district.
NSECP	Number of secondary programs.
NSRH	Number of senior high schools.
NYF	Number of years for which population data is to be forecasted.
OSC	Old school code.
P	Subscript denoting a particular program or grade group. P=1 represents the Early Childhood program, P=2 represents the Elementary program, P=3 represents the Primary program, P=4, represents the Intermediate program, and P=5 represents the Secondary program.
PL	Temporary index used to denote the lower value for the program subscript P.
PU	Temporary index used to denote the upper value for the program subscript P.
PCTRAC(C,R,Y)	Racial composition in percent for each census tract. Subscript I ranges over census tracts. Subscript R ranges over ethnic groups. Subscript Y ranges over years.
PØP(C,R,Y)	Population data by ethnic group within census tract and year. Subscript C ranges over the census tracts, where C=1 is census tract 1, C=2 is census tract 2, etc. C=23 represents the total citywide population by ethnic group within year. Subscript R ranges over ethnic groups where R=1 is Black. R=2 is Spanish, R=3 is other, and R=4 is Total by Census Tract. Subscript Y ranges over years.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
POPFTD(I,Y)	Population forecast by ethnic group. Subscript I=1 is Non-White. Subscript I=2 represents Other. Subscript Y ranges over years.
POVR(Y)	Y1-Y5 population forecast by ethnic group read as input. Subscript Y ranges over years.
PSECRP(P,R)	Ratio of CY secondary enrollment by ethnic group within program to total secondary enrollment by ethnic group. Subscript P ranges over secondary program, and subscript R ranges over ethnic groups.
PSPAN	Proportion of Spanish speaking population by census tract in Non-White population for 1970.
PROGNM(P,J)	Variable used to store various program names required to label output reports. Subscript P ranges over the set of program names. Subscript J ranges over the locations necessary to store the characters in the program title.
PSPAN	Percentage of 1970 Spanish population in 1970 total Non-White population.
R	Index used to denote an ethnic group. R=1 represents Black, R=2 represents Spanish, and R=3 represents Other. R=4 represents population total by census tract (across all ethnic groups, R=1, R=2, and R=3).
RUNDT	Data of and number of the computer run.
S	Index used to denote a school. S=1 is the Cadwalader School, S=2 is the Columbus School, etc. See Table II-1 for the school codes. S=26 represents total enrollment by grade (across are schools).

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
SAXCT	Ratio of the area of a school service area by census tract to the total area of the census tract.
SECENR(P,G,R)	Current year secondary enrollment by ethnic group within grade within secondary program. Subscript P ranges over secondary programs. P=1 is the regular secondary program and P=2 represents vocational-technical. P=5 represents total secondary enrollment by ethnic group within grade. Subscript G ranges over grade. G=1 represents 10th grade, and G=3 represents 12th grade. Subscript R ranges over ethnic groups. R=4 represents total secondary enrollment by ethnic group within secondary program.
SECFOR(P,R,Y)	Secondary enrollment forecast. Subscript P ranges over secondary programs, subscript R ranges over ethnic groups, and subscript Y ranges over years. Y=1 to Y=5 represents the Y1-Y5 secondary enrollment forecast by secondary program, by ethnic group, and by year.
SEC1(P)	Total CY secondary enrollment by secondary program. P ranges over secondary programs.
SL	Temporary index used to denote the lower value for the school subscript S.
SLEVEL(L,Y)	Public enrollment by school level and year. Subscript L ranges over school levels. L=1 represents elementary, and L=2 represents secondary. Subscript Y ranges over years. Y=1 represents CY enrollment by level and Y=2 to Y=6 represents Y1-Y5 enrollment estimates by level.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
SOO(I)	Print order of census tract to school service area assignment report. Subscript I ranges over the school codes in the order in which data for a school is to be printed on the report.
STOTP(L,R,Y)	Special education enrollment. Subscript L ranges over school levels. L=1 represents the elementary level and L=2 represents the secondary level. L=3 represents the sum of L=1 and L=2. Subscript R ranges over ethnic groups. Subscript R=4 represents Total Special Education enrollment by level by year. Subscript Y ranges over years. Y=1 represents CY enrollment. Y=2 to Y=6 represents Y1-Y5 Special Education enrollment forecast by ethnic group within level.
SU	Temporary index used to denote the upper value for the school subscript S.
SUBGR(G,R,Y)	Enrollment data by grade, by race, and by year. Subscript G ranges over grades. Subscript R ranges over ethnic groups. Subscript Y ranges over years. Y=1 represents CY enrollment, and Y=2 to Y=6 represents the Y1-Y5 enrollment forecast by ethnic group within grade.
SUBPR(P,R,Y)	Public enrollment by instructional program, by ethnic group and by year. Subscript P ranges over programs, subscript R ranges over ethnic groups, and subscript Y over years. P=6 represents total enrollment by ethnic group and year. R=4 represents total enrollment by program and year. Y=1 represents CY enrollment and Y=2 to Y=6 equals Y1-Y5 public enrollment forecast by ethnic group within program.

VARIABLE DICTIONARY OF THE COMPUTER PROGRAM

Variable	Definition
TC	Card type identifier. TC equals NWOV represents Y1-Y5 Non-White population forecast input, TC equals WOVR represents Y1-Y5 White population forecast input, and TC equals END represents the end of the population forecast input cards. TC equals PFOR represents population forecast override not in effect and population forecast is to be calculated.
T1(Y)	Enrollment in grades 1-6. Subscript Y ranges over years. T=1 represents the current year. T=2 represents Y1, T=3 represents Y2, and so on.
WORK(C,K)	Area, in acres, of each census tract in the school district, and of the city as a whole. Subscript C ranges over the census tracts. Subscript K=1 is 1960 net residential area by census tract. K=2 is 1960 gross residential acreage. K=3 is 1970 gross residential acreage. K=4 represents population density per net residential acre for 1960. K=5 is gross or net population density for 1970. K=6 represents gross or net population density for the first forecast year. K=7 represents gross or net population density for the second forecast year, etc.
Y	Index used to denote a year. In some instances, Y=1 represents 1940 census data, Y=2 represents 1950, Y=3 represents 1960, and Y=4 represents 1970. Y=5 represents the current year. Y=6 represents the first forecast year, Y=7 the second, etc. In those cases where Y ranges from 1 to 6, Y=1 represents the current year, Y=2 represents the first forecast year, Y=3 represents the second forecast year, etc.
YRS(Y)	Variable used to store the year titles. Subscript Y ranges over the number of census years plus current year plus forecast years (usually 10).

VARIABLE DICTIONARY FOR SUBROUTINE POPFOR

POPFOR produces the time trended forecasts of total white and total non-white population. The white population forecast uses a constant absolute increment time trend. The model is:

$W_t = a + bxt$, $t = o, 10, 20$, or 30

Where

t = o represents the first census year, t=10 represents the second census year, etc.

W_t = the white population in census year t

a = the estimated trend white population in the first census year (t=o)

b = the estimated yearly absolute increment

In POPFOR, for the white population:

Y = W_t

A = a

B = b

X(I) = t

The non-white population forecast uses a constant present change time trend. The model is:

$N_t = a \times (1 + b)^t$, $t = o, 10, 20$, or 30

Where

t = o represents the first census year, t=10 represents the second census year, etc.

N_t = the non-white population is census year t

a = the estimated trend non-white population in the first census year (t=o)

b = the estimated yearly rate of change

VARIABLE DICTIONARY FOR SUBROUTINE POPFOR

The logarithms of both sides of the model yields:

$\log(n_t) = \log(a) + t \times \log(1 + b)$

In POPFOR, for the non-white population:

$Y = \log(n_t)$

$A = \log(a)$

$B = \log(1 + b)$

$X(I) = t$

The remaining variables of POPFOR are defined in the following table:

Variable	Definition
D	The difference between the actual population and the trend for a census year.
F	The trend population for a census year and the forecast or its logarithm for a forecast year.
GP	The estimated yearly percent change for the non-white population.
I	I ranges over ethnic group. I=1 represents the non-white population forecast and I=2 represents the white population forecast.
J	J ranges over years.
JJ	The forecast year subscript value of POPFOR to return the forecasts to the main program.
K	The forecast year.

VARIABLE DICTIONARY FOR SUBROUTINE POPFOR

Variable	Definition
PE	The percent error between the actual population and its time trend for a census year.
P0PFTD(I,JJ)	The actual population by census year (JJ=1, 2, 3, and 4) and the forecasted populations by forecast years (JJ=5, 6..., NYF+4). I=1 represents non-white population and I=2 white.
SX	Sum of the census years (0, 10, 20, 30).
SX2	Sum of the census years squared.
SX	Sum of the actual population or its logarithm times the census years.
S	Sum of the actual population or its logarithm for the census years.

SAMPLE OUTPUT REPORTS

The enrollment reports generated by the ENROLLMENT MODULE computer program are described in detail in this section. Sample printouts are also displayed. The outputs can be grouped under one of three headings: first, district summary reports by grade, by program, by school; second, school detail reports; and, third reports which display input data and various calculations used in forecasting enrollment.

The reports displayed in this chapter are intended for illustrative purposes only.

ENROLLMENT FORECAST

SYSTEM FOR TRENTON'S EDUCATIONAL PLANNING(STEP)

PREPARED BY
GOVERNMENT STUDIES AND SYSTEMS, INC.
3401 MARKET STREET
PHILADELPHIA, PENNSYLVANIA 19104

THIS PROJECT IS SUPPORTED THROUGH A GRANT BY
THE U.S. OFFICE OF EDUCATION,
NEW JERSEY DEPARTMENT OF EDUCATION
UNDER TITLE III, ESEA

1970 non-white and white population by census tract for census tracts 1 to 22 are input. The 1970 total population by census tract is calculated by adding the 1970 non-white to 1970 white population by census tract.

The percent of 1970 ethnic group population by census tract to 1970 total ethnic group population is calculated for the non-white and the white populations. The percent ethnic composition of each census tract based upon the total ethnic population of the city is critical for it is used to distribute the Y1-Y5 total population forecast for non-white and white ethnic groups among the 22 census tracts for each forecast year. If an ethnic group is not represented in a census tract in 1970, a population forecast value will not appear for the ethnic group in that census tract in years Y1-Y5.

The 1970 estimated total Spanish population is input. The total 1970 Spanish population divided by the 1970 total non-white population equals the percent Spanish in the non-white population. The percent Spanish in the Non-white population times the non-white population by census tract equals the Spanish population by census tract. Black population by census tract is calculated as the difference between Non-white population by census tract and Spanish population by census tract.

The use of the percent Spanish in the Non-white population assumes that Spanish population will only be displayed in census tracts which have a non-white population, and that allocation of Spanish population by census tract for Y1-Y5 is at the same percent based upon 1970 data.

1970 POPULATION BY CENSUS TRACT

TRACT	C1	2	3	4	5	6	7	8	9	10	11	12
NON-WHITE	67.	21.	28.	196.	53.	50.	81.	187.	2551.	1710.	3719.	1292.
WHITE	2593.	3515.	4187.	4558.	3882.	4561.	3023.	2280.	4498.	1452.	3121.	3435.
TOTAL	2660.	3536.	4215.	4754.	3935.	4611.	3104.	2467.	7049.	3162.	6840.	4727.

TRACT	13	14	15	16	17	18	19	20	21	22	23
NON-WHITE	619.	3636.	4584.	1639.	3759.	626.	3068.	2719.	3666.	2232.	38705.
WHITE	3197.	3025.	323.	151.	2303.	3327.	628.	193.	3019.	4609.	62080.
TOTAL	3816.	6661.	4907.	1790.	6062.	3953.	3696.	2912.	6685.	6841.	105885.

RATIO OF OF 1970 ETHNIC GROUP POPULATION BY CENSUS TRACT
TO 1970 TOTAL ETHNIC GROUP POPULATION(IN PERCENTS)

TRACT	C1	2	3	4	5	6	7	8	9	10	11	12
NON-WHITE	0.17	0.05	0.07	0.51	0.14	0.13	0.21	0.48	6.59	4.42	9.61	3.34
WHITE	4.13	5.66	6.74	7.34	6.25	7.35	4.87	3.67	7.25	2.34	5.03	5.53

TRACT	13	14	15	16	17	18	19	20	21	22	23
NON-WHITE	1.60	15.08	11.84	4.23	9.71	1.62	7.93	7.02	9.47	5.77	
WHITE	5.15	4.87	0.52	0.24	3.71	5.36	1.33	0.31	4.86	7.42	

ESTIMATED TOTAL SPANISH POPULATION IS: 5100.

PERCENT SPANISH IN NON-WHITE POPULATION EQUALS 13.18.
SPANISH POPULATION BY CENSUS TRACT IS THE PRODUCT OF
THIS PERCENTAGE TIMES THE NON-WHITE POPULATION BY CENSUS
TRACT.NON-WHITE POPULATION IS ADJUSTED ACCORDINGLY.

The CY and Y1-Y5 population forecasts for Non-White and White ethnic groups are calculated by time trending the 1940, 1950, 1960, and 1970 census data. There is insufficient historical data to permit a time trending of the Spanish population.

Time trending of the Non-White and White populations provide Trenton School District's educational planners with an estimates of future population, assuming that past historical patterns continue into the future. Then, educational planners can modify these future estimates based upon expert opinion about conditions which might change the historical patterns.

Statistical analyses were performed for both the White and the Non-White population to determine what form of the trend line most closely fit the past data. For the Non-White population a constant percent change trend line fit best. For the White population, a constant absolute increment, i.e., straight-line, trend fit best.

The reports show what yearly percent change in Non-White population and yearly absolute change in White population best fit the past census years and how close the past population are to their trends. The White and Non-White population forecast from 1970 through to Y5 are shown.

In addition to the calculated population forecast report, which shows the detailed computation, a summary report of the calculated ethnic group population forecast is also printed. This report, illustrated on page 5 of the sample reports, displays the CY and Y1-Y5 population forecasts by ethnic group and the message "OVERRIDE OPTION NOT IN EFFECT - POPULATION FORECAST COMPUTED." This message indicates that the trended population forecast will be used to perform the enrollment forecasts.

```
                                              TRENTON SCHOOL DISTRICT                                   REPORT NO. TSDENR-1001
        POPULATION FORECASTING BY TIME TREND                                                            RUN DATE:FEB. 8,1972

   NON-WHITE POPULATION IS FORECASTED BY A CONSTANT PERCENT TIME TREND

   ESTIMATED NON-WHITE YEARLY PERCENT CHANGE:    5.3

   A COMPARISON BETWEEN THE ACTUAL POPULATION AND THE TIME TREND FOR THE CENSUS YEARS

                      NON-WHITE          NON-WHITE                PERCENT
   CENSUS YEAR    ACTUAL POPULATION    TIME TREND    DIFFERENCE   ERROR
   -----------    -----------------    ----------    ----------   -------

      1940               8518.             8431.          87.       1.0

      1950              13591.            14083.        -492.      -3.6

      1960              24497.            23525.         972.       4.0

      1970              38705.            39295.        -590.      -1.5

   FORECASTS BASED ON TIME TREND

                   NON-WHITE
       YEAR     FORECASTED POPULATION
       ----     ---------------------

       1971            41384.

       1972            43541.

       1973            45833.

       1974            48246.

       1975            50786.

       1976            53460.

   WHITE POPULATION IS FORECASTED BY A CONSTANT ABSOLUTE INCREMENT TIME TREND

   ESTIMATED WHITE YEARLY ABSOLUTE CHANGE :   -1410.5

   A COMPARISON BETWEEN THE ACTUAL POPULATION AND THE TIME TREND FOR THE CENSUS YEARS

                     WHITE              WHITE                    PERCENT
   CENSUS YEAR    ACTUAL POPULATION    TIME TREND    DIFFERENCE   ERROR
   -----------    -----------------    ----------    ----------   -------

      1940             100900.           110525.       -9625.      -9.5

      1950             109548.            96415.       13133.      12.0

      1960              84915.            82306.        2609.       3.1

      1970              62080.            68197.       -6117.      -9.9

   FORECASTS BASED ON TIME TREND

                   WHITE
       YEAR     FORECASTED POPULATION
       ----     ---------------------
                                                                                                        PAGE   3
```

1971	66786.
1972	65375.
1973	63964.
1974	62553.
1975	61142.
1976	59731.

```
POPULATION FORECAST
     OVERRIDE OPTION NOT IN EFFECT-POPULATION FORECAST COMPUTED
                          1971        1972        1973        1974        1975        1976

           NON-WHITE     41364.      43541.      45833.      48246.      50786.      53460.

           WHITE         66786.      65375.      63964.      62553.      61142.      59731.
```

ESTIMATED ETHNIC GROUP POPULATION FORECAST REPORT - ESTIMATE INPUT - Page 6

The CY and Y1-Y5 population forecast for Non-White and White ethnic groups is estimated and input directly by the user (calculation of the CY and Y1-Y5 population by the computer program is bypassed). The report is flagged with "OVERRIDE OPTION EXERCISED BY USER." This message indicates that enrollment estimates will be based on population estimates input directly by the user.

```
POPULATION FORECAST
    OVERRIDE OPTION EXERCISED BY USER
                              1971       1972       1973       1974       1975       1976

            NON-WHITE        50000.     51000.     52000.     53000.     54000.     55000.

            WHITE            66000.     65000.     64000.     63000.     62000.     61000.
```

The percent composition of each census tract by ethnic group for 1970 was previously calculated. Refer to the Report of Ethnic Composition of Census Tracts for 1970. The CY and Y1-Y5 population forecast by ethnic group (White and Non-white) was either calculated or input. The Ethnic Group Population Forecast Report provides further details on the population forecast. The percent Spanish population to total non-white population for 1970 was previously calculated.

The CY and Y1-Y5 population forecast by ethnic group Non-white and White) and by census tract is calculated as the product of the CY and Y1-Y5 Non-white population forecast times the 1970 percent non-white by census tract, and the CY and Y1-Y5 White population forecast time the 1970 percent white by census tract.

The CY and Y1-Y5 Spanish population forecast by census tract is calculated as the product of the 1970 percent Spanish in the total non-white population times the CY and Y1-Y5 non-white population by census tract. The CY and Y1-Y5 Black population forecast is calculated by taking the CY and Y1-Y5 Spanish population by census tract from the CY and Y1-Y5 Non-White population by census tract. The CY and Y1-Y5 total population by ethnic group (Black, Spanish, and Other) is calculated as the aggregation of the CY and Y1-Y5 population forecasts across all census tracts for each ethnic group. Total population by census tract is calculated as the summation by census tracts of CY and Y1-Y5 population forecasts across ethnic groups.

The CY and Y1-Y5 percent racial composition by census tract are calculated by dividing the total census tract population of the appropriate year into the respective census tract ethnic group populations for the same year. The percent racial composition by census tract for the census years 1940, 1950, 1960, and 1970 is also calculated and displayed.

TRENTON SCHOOL DISTRICT
RACIAL COMPOSITION WITHIN CENSUS TRACT IN PERCENT
FOR THE CITY OF TRENTON

REPORT NO. TSDENR-1002
RUN DATE:FEB. 8,1972

CENSUS TRACT	ETHNIC GROUP	1940	1950	1960	1970	1971	1972	1973	1974	1975	1976
1	BLACK	0.0	0.026	0.819	2.187	2.173	2.332	2.504	2.689	2.889	3.105
	SPANISH	0.0	0.0	0.0	0.332	0.330	0.354	0.380	0.408	0.438	0.471
	OTHER	100.000	99.972	99.181	97.481	97.497	97.314	97.116	96.903	96.672	96.423
2	BLACK	0.0	0.104	0.152	0.516	0.512	0.551	0.592	0.637	0.686	0.738
	SPANISH	0.0	0.0	0.0	0.078	0.078	0.084	0.090	0.097	0.104	0.112
	OTHER	100.000	99.896	99.848	99.406	99.410	99.366	99.318	99.266	99.210	99.150
3	BLACK	0.019	0.0	0.0	0.577	0.573	0.616	0.662	0.712	0.767	0.826
	SPANISH	0.0	0.0	0.0	0.088	0.087	0.093	0.100	0.108	0.116	0.125
	OTHER	99.981	100.000	100.000	99.336	99.340	99.291	99.237	99.180	99.117	99.049
4	BLACK	0.122	0.048	1.297	3.615	3.592	3.850	4.129	4.428	4.750	5.096
	SPANISH	0.0	0.0	0.0	0.549	0.545	0.584	0.627	0.672	0.721	0.773
	OTHER	99.878	99.952	98.703	95.837	95.863	95.565	95.245	94.900	94.529	94.130
5	BLACK	0.198	0.118	0.116	1.169	1.162	1.248	1.341	1.442	1.551	1.669
	SPANISH	0.0	0.0	0.0	0.177	0.176	0.189	0.204	0.219	0.235	0.253
	OTHER	99.802	99.882	99.884	98.653	98.662	98.563	98.455	98.339	98.214	98.078
6	BLACK	0.095	0.097	0.346	0.941	0.935	1.005	1.080	1.162	1.250	1.345
	SPANISH	0.0	0.0	0.0	0.143	0.142	0.153	0.164	0.176	0.190	0.204
	OTHER	99.905	99.903	99.654	98.916	98.923	98.842	98.756	98.662	98.561	98.451
7	BLACK	0.022	0.048	0.084	2.266	2.251	2.416	2.594	2.786	2.993	3.216
	SPANISH	0.0	0.0	0.0	0.344	0.342	0.367	0.394	0.423	0.454	0.488
	OTHER	99.978	99.952	99.916	97.390	97.407	97.217	97.012	96.792	96.553	96.296
8	BLACK	0.0	0.756	3.454	6.581	6.541	6.994	7.479	7.998	8.553	9.146
	SPANISH	0.0	0.0	0.0	0.999	0.993	1.061	1.135	1.214	1.298	1.388
	OTHER	0.0	99.244	96.546	92.420	92.466	91.944	91.386	90.788	90.149	89.466
9	BLACK	3.093	5.100	24.222	31.421	31.288	32.757	34.261	35.799	37.368	38.964
	SPANISH	0.0	0.0	0.0	4.769	4.748	4.971	5.200	5.433	5.671	5.913
	OTHER	96.907	94.900	75.777	63.810	63.963	62.272	60.540	58.768	56.961	55.122
10	BLACK	14.927	27.045	46.541	46.954	46.811	48.373	49.932	51.485	53.027	54.554
	SPANISH	0.0	0.0	0.0	7.126	7.104	7.341	7.578	7.813	8.047	8.279
	OTHER	85.073	72.955	53.459	45.920	46.085	44.286	42.490	40.702	38.926	37.166
11	BLACK	9.468	13.259	33.442	47.207	47.064	48.625	50.181	51.731	53.269	54.792
	SPANISH	0.0	0.0	0.0	7.164	7.143	7.379	7.616	7.851	8.084	8.315
	OTHER	90.532	86.741	66.558	45.629	45.793	43.996	42.203	40.418	38.647	36.893

12	BLACK	0.0	0.352	3.659	23.731	23.617	24.886	26.204	27.571	28.984	30.442
	SPANISH	0.0	0.0	0.0	3.601	3.584	3.777	3.977	4.184	4.399	4.620
	OTHER	0.0	99.648	96.341	72.668	72.799	71.337	69.819	68.245	66.618	64.938
13	BLACK	0.0	4.410	4.638	14.084	14.006	14.880	15.804	16.778	17.804	18.883
	SPANISH	0.0	0.0	0.0	2.137	2.126	2.258	2.398	2.546	2.702	2.866
	OTHER	0.0	95.590	95.362	83.779	83.869	82.861	81.798	80.676	79.494	78.251
14	BLACK	3.093	10.737	27.331	57.183	57.054	58.458	59.837	61.186	62.505	63.790
	SPANISH	0.0	0.0	0.0	8.678	8.659	8.872	9.081	9.286	9.486	9.681
	OTHER	96.907	89.263	72.669	34.138	34.288	32.670	31.082	29.528	28.009	26.529
15	BLACK	43.872	59.226	86.478	81.108	81.073	81.451	81.808	82.145	82.462	82.761
	SPANISH	0.0	0.0	0.0	12.309	12.304	12.361	12.415	12.467	12.515	12.560
	OTHER	56.128	40.773	13.522	6.582	6.623	6.188	5.777	5.389	5.023	4.679
16	BLACK	7.566	17.670	72.705	79.499	79.455	79.930	80.380	80.806	81.208	81.587
	SPANISH	0.0	0.0	0.0	12.065	12.058	12.130	12.199	12.263	12.324	12.382
	OTHER	92.434	82.330	27.295	8.436	8.487	7.940	7.421	6.931	6.468	6.031
17	BLACK	14.493	13.943	35.543	53.839	53.703	55.178	56.633	58.066	59.474	60.852
	SPANISH	0.0	0.0	0.0	8.171	8.150	8.374	8.595	8.812	9.026	9.235
	OTHER	85.507	86.057	64.457	37.991	38.147	36.448	34.772	33.121	31.501	29.912
18	BLACK	2.691	4.547	10.181	13.749	13.673	14.531	15.437	16.394	17.402	18.464
	SPANISH	0.0	0.0	0.0	2.087	2.075	2.205	2.343	2.488	2.641	2.802
	OTHER	97.309	95.453	89.819	84.164	84.252	83.264	82.220	81.118	79.957	78.734
19	BLACK	7.050	12.465	33.695	68.371	68.275	69.312	70.312	71.274	72.198	73.084
	SPANISH	0.0	0.0	0.0	10.376	10.362	10.519	10.671	10.817	10.957	11.091
	OTHER	92.950	87.535	66.305	21.253	21.364	20.169	19.017	17.909	16.845	15.825
20	BLACK	28.870	41.919	75.990	81.069	81.033	81.414	81.773	82.112	82.432	82.733
	SPANISH	0.0	0.0	0.0	12.303	12.298	12.356	12.410	12.462	12.510	12.556
	OTHER	71.130	58.081	24.010	6.628	6.669	6.231	5.817	5.426	5.058	4.712
21	BLACK	6.930	8.145	23.918	47.613	47.471	49.028	50.581	52.125	53.657	55.173
	SPANISH	0.0	0.0	0.0	7.226	7.204	7.441	7.676	7.911	8.143	8.373
	OTHER	93.070	91.855	76.082	45.161	45.325	43.531	41.743	39.965	38.200	36.454
22	BLACK	0.909	2.819	8.835	28.328	28.201	29.602	31.045	32.528	34.049	35.606
	SPANISH	0.0	0.0	0.0	4.299	4.280	4.492	4.711	4.937	5.167	5.404
	OTHER	99.091	97.181	91.165	67.373	67.519	65.905	64.244	62.536	60.784	58.991

The 1940, 1950, 1960, and 1970 census population data by census tract and ethnic group were previously input, and the CY and Y1-Y5 population forecast by ethnic group was previously calculated or input.

The CY and Y1-Y5 population forecast by ethnic group and census tract is calculated in the following steps:

1. Non-white population foreacast by census tract for a forecast year equals the 1970 percent Non-white by census tract times the non-white population forecast for the forecast year.

2. Spanish population forecast by census tract for a forecast year equals the 1970 percent Spanish in the Non-white population times the Non-white population forecast by census tract for a forecast year.

3. Black population forecast by census tract for a forecast year equals the Non-white forecast by census tract for a forecast year minus the Spanish forecast by census tract for the same forecast year.

4. White or other population forecast by census tract for a forecast year equals the 1970 percent White by census tract times the White population forecast for a forecast year.

5. Ethnic population forecasts by census tract by year are aggregated to obtain the total population by census tract by year.

The population forecast is then printed by ethnic group within census tract for 1970, the current year, and each of five forecast years.

TRENTON SCHOOL DISTRICT
POPULATION FORECAST BY CENSUS TRACT, ETHNIC GROUP, AND YEAR
FOR THE CITY OF TRENTON

REPORT NO. TSDENR-1003
RUN DATE:FEB. 8,1972

CENSUS TRACT	ETHNIC GROUP	1970	1971	1972	1973	1974	1975	1976
1	BLACK	58.	62.	65.	69.	73.	76.	80.
	SPANISH	9.	9.	10.	10.	11.	12.	12.
	OTHER	2593.	2790.	2731.	2672.	2613.	2554.	2495.
	TOTAL	2660.	2861.	2806.	2751.	2696.	2642.	2587.
2	BLACK	18.	19.	21.	22.	23.	24.	25.
	SPANISH	3.	3.	3.	3.	3.	4.	4.
	OTHER	3515.	3781.	3702.	3622.	3542.	3462.	3382.
	TOTAL	3536.	3804.	3725.	3647.	3568.	3489.	3411.
3	BLACK	24.	26.	27.	29.	30.	32.	34.
	SPANISH	4.	4.	4.	4.	5.	5.	4.
	OTHER	4187.	4504.	4409.	4314.	4219.	4124.	4029.
	TOTAL	4215.	4534.	4441.	4347.	4254.	4160.	4067.
4	BLACK	172.	184.	193.	204.	214.	226.	237.
	SPANISH	26.	28.	29.	31.	33.	34.	36.
	OTHER	4558.	4904.	4800.	4696.	4593.	4489.	4386.
	TOTAL	4756.	5115.	5023.	4931.	4840.	4749.	4659.
5	BLACK	46.	49.	52.	54.	57.	60.	64.
	SPANISH	7.	7.	8.	8.	9.	9.	10.
	OTHER	3882.	4176.	4088.	4000.	3912.	3823.	3735.
	TOTAL	3935.	4233.	4148.	4063.	3978.	3893.	3808.
6	BLACK	43.	46.	49.	51.	54.	57.	60.
	SPANISH	7.	7.	7.	8.	8.	9.	9.
	OTHER	4561.	4907.	4803.	4699.	4596.	4492.	4388.
	TOTAL	4611.	4960.	4859.	4759.	4658.	4558.	4457.
7	BLACK	70.	75.	79.	83.	88.	92.	97.
	SPANISH	11.	11.	12.	13.	13.	14.	15.
	OTHER	3023.	3252.	3183.	3115.	3046.	2977.	2909.
	TOTAL	3104.	3339.	3275.	3211.	3147.	3084.	3020.
8	BLACK	162.	174.	183.	192.	202.	213.	224.
	SPANISH	25.	26.	27.	29.	31.	32.	34.
	OTHER	2280.	2453.	2401.	2349.	2297.	2246.	2194.
	TOTAL	2467.	2653.	2611.	2571.	2530.	2491.	2452.
9	BLACK	2215.	2367.	2492.	2623.	2761.	2906.	3059.
	SPANISH	336.	359.	376.	398.	419.	441.	464.
	OTHER	4498.	4839.	4737.	4634.	4532.	4430.	4328.
	TOTAL	7049.	7565.	7605.	7655.	7712.	7777.	7851.
10	BLACK	1485.	1587.	1676.	1758.	1851.	1948.	2051.
	SPANISH	225.	241.	253.	267.	281.	296.	311.

	OTHER	1452.	1562.	1529.	1496.	1463.	1430.	1397.
	TOTAL	3162.	3390.	3453.	3521.	3595.	3674.	3759.
11	BLACK	3229.	3451.	3632.	3824.	4025.	4237.	4460.
	SPANISH	490.	524.	551.	580.	611.	643.	677.
	OTHER	3121.	3358.	3287.	3216.	3145.	3074.	3003.
	TOTAL	6840.	7332.	7470.	7620.	7761.	7954.	8140.
12	BLACK	1122.	1199.	1262.	1328.	1398.	1472.	1549.
	SPANISH	170.	182.	192.	202.	212.	223.	235.
	OTHER	3435.	3695.	3617.	3539.	3461.	3383.	3305.
	TOTAL	4727.	5076.	5071.	5069.	5072.	5078.	5090.
13	BLACK	537.	574.	605.	636.	670.	705.	742.
	SPANISH	82.	87.	92.	97.	102.	107.	113.
	OTHER	3197.	3439.	3367.	3294.	3221.	3149.	3076.
	TOTAL	3816.	4101.	4063.	4027.	3993.	3961.	3931.
14	BLACK	5067.	5415.	5700.	6000.	6316.	6649.	6999.
	SPANISH	769.	822.	865.	911.	959.	1009.	1062.
	OTHER	3025.	3254.	3186.	3117.	3048.	2979.	2911.
	TOTAL	8861.	9491.	9751.	10028.	10323.	10637.	10971.
15	BLACK	3980.	4253.	4477.	4713.	4961.	5222.	5497.
	SPANISH	604.	646.	679.	715.	753.	793.	834.
	OTHER	323.	347.	340.	333.	325.	318.	311.
	TOTAL	4907.	5246.	5497.	5761.	6039.	6333.	6642.
16	BLACK	1423.	1521.	1601.	1685.	1774.	1867.	1966.
	SPANISH	216.	231.	243.	256.	269.	283.	298.
	OTHER	151.	162.	159.	156.	152.	149.	145.
	TOTAL	1790.	1914.	2003.	2096.	2195.	2299.	2409.
17	BLACK	3264.	3488.	3671.	3865.	4068.	4282.	4508.
	SPANISH	495.	529.	557.	587.	617.	650.	684.
	OTHER	2303.	2478.	2425.	2373.	2321.	2268.	2216.
	TOTAL	6062.	6495.	6654.	6824.	7006.	7201.	7408.
18	BLACK	544.	581.	611	644.	677.	713.	751.
	SPANISH	82.	88.	93.	98.	103.	108.	114.
	OTHER	3327.	3579.	3504.	3428.	3352.	3277.	3201.
	TOTAL	3953.	4248.	4208.	4169.	4133.	4098.	4066.
19	BLACK	2664.	2847.	2997.	3154.	3320.	3495.	3679.
	SPANISH	404.	432.	455.	479.	504.	530.	558.
	OTHER	828.	891.	872.	853.	834.	815.	797.
	TOTAL	3896.	4170.	4323.	4486.	4659.	4841.	5034.
20	BLACK	2361.	2523.	2656.	2796.	2943.	3098.	3261.
	SPANISH	358.	383.	403.	424.	447.	470.	495.
	OTHER	193.	208.	203.	199.	194.	190.	186.
	TOTAL	2912.	3113.	3262.	3419.	3584.	3758.	3941.

21	BLACK	3163.	3402.	3581.	3769.	3968.	4176.	4396.
	SPANISH	483.	516.	543.	572.	602.	634.	667.
	OTHER	3019.	3248.	3179.	3111.	3042.	2973.	2905.
	TOTAL	6665.	7166.	7303.	7452.	7612.	7784.	7968.
22	BLACK	1938.	2071.	2180.	2295.	2416.	2543.	2677.
	SPANISH	294.	314.	331.	348.	367.	386.	406.
	OTHER	4609.	4958.	4854.	4749.	4644.	4539.	4435.
	TOTAL	6841.	7344.	7365.	7392.	7426.	7468.	7517.
TOTAL	BLACK	38765.	35913.	37804.	39794.	41889.	44094.	46416.
	SPANISH	5100.	5450.	5737.	6039.	6357.	6692.	7044.
	OTHER	62000.	66788.	65375.	63964.	62553.	61142.	59731.
	TOTAL	105865.	108150.	108916.	109797.	110799.	111928.	113191.

The gross acreage by census tract for 1970 is input. The population density per gross acre is computed by dividing the 1970 gross acreage by census tract into the population forecast by census tract by forecast year.

This report is intended to be used as a reference point for determining the reasonableness of the population forecasts by comparing the Trenton population densities by census tracts to those cities of comparable size.

TRENTON SCHOOL DISTRICT
POPULATION DENSITY PER GROSS ACRE*
FOR THE CITY OF TRENTON

REPORT NO. TSDENR-1004
RUN DATE:FEB. 8,1972

CENSUS TRACT	GROSS ACRES 1970	1970	1971	1972	1973	1974	1975	1976
1	243.80	10.91	11.74	11.51	11.28	11.06	10.84	10.61
2	120.30	29.39	31.62	30.97	30.31	29.66	29.01	28.35
3	155.50	27.11	29.16	28.56	27.96	27.36	26.76	26.16
4	136.90	34.74	37.36	36.69	36.02	35.35	34.69	34.03
5	101.70	38.69	41.62	40.78	39.95	39.11	38.28	37.45
6	162.50	28.38	30.52	29.90	29.28	28.67	28.05	27.43
7	80.00	38.80	41.73	40.93	40.13	39.34	38.55	37.76
8	131.20	18.80	20.22	19.90	19.59	19.29	18.97	18.69
9	362.20	19.46	20.89	21.00	21.14	21.29	21.47	21.68
10	216.30	14.62	15.67	15.96	16.25	16.62	16.98	17.38
11	351.40	19.48	20.87	21.26	21.68	22.14	22.63	23.16
12	334.70	14.12	15.17	15.15	15.15	15.15	15.17	15.21
13	437.80	8.72	9.37	9.28	9.20	9.12	9.05	8.98
14	339.80	26.08	27.93	28.70	29.51	30.38	31.30	32.29
15	145.80	32.76	35.02	36.69	38.46	40.32	42.28	44.34
16	69.10	25.90	27.70	28.98	30.34	31.77	33.28	34.86
17	247.00	24.54	26.29	26.94	27.63	28.37	29.15	29.99
18	306.60	12.89	13.86	13.72	13.60	13.48	13.37	13.26
19	144.00	27.08	28.55	30.02	31.15	32.35	33.62	34.96
20	176.80	16.49	17.63	18.47	19.36	20.29	21.28	22.32
21	227.20	29.42	31.54	32.14	32.80	33.50	34.26	35.07
22	277.80	24.63	26.44	26.51	26.61	26.73	26.88	27.06
TOTAL	4775.	22.17	22.65	22.81	22.99	23.20	23.44	23.70

* POPULATION DENSITY CALCULATED USING
GROSS ACREAGE FOR 1970 BY CENSUS TRACT

The residential acreage by census tract for 1970 is input. The population density per residential acre is computed by dividing the 1960 residential acreage by census tract into the population forecast by census tract by forecast year.

TRENTON SCHOOL DISTRICT
POPULATION DENSITY PER NET RESIDENTIAL ACRE BY CENSUS TRACT
FOR THE CITY OF TRENTON

REPORT NO. TSDENR-1005
RUN DATE:FEB. 8,1972

CENSUS TRACT	1960 RESIDENTIAL ACREAGE*	1960	1970	1972	1973	1974	1975	1976
1	41.	74.46	64.88	68.44	67.10	65.76	64.43	63.11
2	56.	76.30	63.14	66.52	65.12	63.71	62.31	60.91
3	87.	53.41	48.45	51.04	49.97	48.89	47.82	46.75
4	82.	63.53	58.00	61.25	60.13	59.02	57.91	56.82
5	70.	61.80	56.21	59.25	58.04	56.82	55.61	54.40
6	84.	61.92	54.89	57.85	56.65	55.45	54.26	53.07
7	43.	82.95	72.19	78.15	74.67	73.19	71.71	70.24
8	33.	88.61	74.78	79.13	77.90	76.68	75.48	74.30
9	57.	98.78	72.67	78.42	78.92	79.51	80.18	80.94
10	40.	135.46	68.74	75.06	76.54	78.14	79.87	81.72
11	91.	74.26	75.18	82.09	83.73	85.50	87.40	89.45
12	132.	32.71	35.81	38.41	38.40	38.42	38.47	38.56
13	152.	24.54	25.11	26.73	26.49	26.27	26.06	25.86
14	148.	58.91	55.27	65.88	67.75	69.75	71.87	74.13
15	85.	71.06	71.12	79.67	83.49	87.53	91.78	96.26
16	24.	86.71	74.58	85.45	87.35	91.47	95.80	100.38
17	84.	81.19	72.17	79.21	81.24	83.41	85.72	88.19
18	72.	61.53	54.90	58.44	57.91	57.40	56.92	56.47
19	39.	83.58	99.90	110.85	115.03	119.45	124.13	129.08
20	42.	78.38	69.33	77.67	81.40	85.33	89.47	93.84
21	108.	58.61	61.90	67.62	69.00	70.49	72.07	73.78
22	112.	60.23	61.08	65.75	66.00	66.31	66.68	67.12
TOTAL	1712.	63.91	61.85	63.82	64.13	64.72	65.38	66.12

*SOURCE-CITY OF TRENTON, DEPT. OF PLANNING
DENSITY CALCULATED USING 1960
RESIDENTIAL ACREAGE BY CENSUS TRACT

The area in square miles of a census tract contained in a school service area are input by school and census tract. For example, the total area of census tract 1, .381 square miles, is in the Mott School service area, the total area of census tract 2 is .188 square miles, .181 square miles being in the Harrison School Service area and .007 square miles being part of the Franklin School service area.

The area of a census tract in a school service area is converted to acres by multiplying the area in square miles times 640 acres/square miles. The percent assignment of a census tract to a school service area equals the area of a census tract in a school service area divided by the total area of the census tract.

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                                  TRENTON SCHOOL DISTRICT                                   REPORT NO. TSDENR-1006
                         ASSIGNMENT OF SCHOOL SERVICE AREAS TO CENSUS TRACTS                RUN DATE:FEB. 8,1972
     CADWALADER SCHOOL        11   78.9
                              15    4.7
     COLUMBUS SCHOOL          18  100.0
                              19   36.4
     COOK SCHOOL              21   11.5
                              22   29.7
     FRANKLIN SCHOOL           2    3.7
                               3  100.0
                               4   11.7
                               5   27.7
     GRANT SCHOOL              9   23.9
                              20   60.1
                              21    3.9
     GREGORY SCHOOL           12   17.1
                              13    1.5
                              14   28.1
                              15   18.4
     HARRISON SCHOOL           2   56.3
                               4   55.1
                               5    1.9
                               8   22.0
     JEFFERSON SCHOOL         14    0.8
                              15   13.7
                              16   34.3
                              17  100.0
     JUNIOR 2 ELEMENTARY       6   83.1
                              21   31.0
                              22   49.1
     JUNIOR 3 ELEMENTARY      12  100.0
                              13   68.1
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JUNIOR 5 ELEMENTARY	9	17.7
	11	0.4
	15	32.9
	16	65.7
MONUMENT SCHOOL	14	25.4
	15	30.3
MOTT SCHOOL	1	100.0
	8	21.5
	10	21.3
PARKER SCHOOL	6	13.2
	9	36.9
	10	78.7
	11	3.6
ROBBINS SCHOOL	5	10.1
	7	59.2
	8	33.2
	9	21.6
	21	53.5
STOKES SCHOOL	13	30.4
	14	45.8
WASHINGTON SCHOOL	4	33.2
	5	60.4
	6	16.9
	7	40.8
	8	10.2
WILSON SCHOOL	19	63.6
	20	39.9
	22	21.2
JUNIOR 1	9	3.7
	14	26.2
	15	15.8
	16	44.4

```
                    17  100.0
                    18  100.0
                    19  100.0
                    20   97.4
                    21    3.9
                    22   21.5
     JUNIOR 2        5   31.9
                     6  100.0
                     7   24.8
                     9    1.8
                    21   62.6
                    22   78.5
     JUNIOR 3       11   89.5
                    12  100.0
                    13  100.0
                    14   73.8
                    15   21.4
     JUNIOR 4        1  100.0
                     2  100.0
                     3  100.0
                     4  100.0
                     5   68.1
                     7   75.2
                     8  100.0
                     9   13.3
                    10   73.1
                    11   10.5
                    15   62.8
                    16   55.6
                    21   10.9
     JUNIOR 5        9   81.3
                    10   26.9
```

```
                         20    2.6
                         21    2.5
      TRENTON HIGH SCHOOL  1  100.0
                          2  100.0
                          3  100.0
                          4  100.0
                          5  100.0
                          6  100.0
                          7  100.0
                          8  100.0
                          9  100.0
                         10  100.0
                         11  100.0
                         12  100.0
                         13  100.0
                         14  100.0
                         15  100.0
                         16  100.0
                         17  100.0
                         18  100.0
                         19  100.0
                         20  100.0
                         21  100.0
                         22  100.0
```

Current year public enrollment by ethnic group within grade and school is input. Total CY enrollment by ethnic group within grade is calculated by summing enrollments by ethnic group and grade across all schools. Total CY enrollment by grade is calculated by summing enrollments by grade across all ethnic groups.

The CY population forecast by ethnic group was previously calculated. CY enrollment per thousand in the CY population by ethnic group and grade is calculated as follows:

1. Black enrollment by grade per thousand in the CY Black population equals CY Black enrollment by grade divided by CY Black population forecast.
2. Spanish enrollment by grade per thousand in the CY Spanish population equals CY Spanish enrollment by grade divided by CY Spanish population forecast.
3. White enrollment by grade per thousand in the CY White population equals CY White enrollment by grade divided by the CY White population forecast.

```
                          PUBLIC ENROLLMENT FACTORS BY ETHNIC GROUP AND GRADE
FACTORS ARE BASED ON CY PUBLIC ENROLLMENT
BY ETHNIC GROUP AND GRADE PER THOUSAND IN
CY POPULATION BY ETHNIC GROUP

 ------------------------------------------------------------------------

  CY PUBLIC ENROLLMENT

                 PK        K         1ST       2ND       3RD       4TH       5TH

    BLACK         0.       959.      1001.      968.      1054.      961.      914.

    SPANISH       0.       147.       155.      138.       127.      130.      112.

    OTHER         0.       330.       296.      281.       296.      294.      301.


                 6TH       7TH       8TH       9TH       10TH      11TH      12TH

    BLACK        911.      992.      862.      763.       828.      622.      579.

    SPANISH      114.       99.       93.       73.        68.       47.       30.

    OTHER        280.      300.      327.      328.       275.      225.      283.

    TOTAL         0.        0.        0.        0.         0.        0.        0.
 ------------------------------------------------------------------------


  CY POPULATION BY ETHNIC GROUP
    BLACK       35913.
    SPANISH      5450.
    OTHER       66780.
 ------------------------------------------------------------------------

  CY ENROLLMENT PER THOUSAND IN CY POPULATION
  BY ETHNIC GROUP AND GRADE(IN PERCENTS)
                 PK        K         1ST       2ND       3RD       4TH       5TH

    BLACK        0.0       2.67      2.79      2.70      2.93      2.68      2.55
    SPANISH      0.0       2.70      2.84      2.53      2.33      2.39      2.05
    OTHER        0.0       0.49      0.44      0.42      0.44      0.44      0.45
                 6TH       7TH       8TH       9TH       10TH      11TH      12TH

    BLACK        2.54      2.76      2.40      2.12      2.31      1.73      1.61
    SPANISH      2.09      1.82      1.71      1.34      1.25      0.86      0.55
    OTHER        0.42      0.45      0.49      0.49      0.41      0.34      0.42
```

SCHOOL ENROLLMENT FORECAST REPORT - Pages 19,20,21 & 22

The CY AND Y1-Y5 population forecast by ethnic group within census tract was previously calculated. Refer to the Population Forecast Report and the Report of the Percent Racial Composition by Census Tract for additional details about the population forecast calculations.

The CY and Y1-Y5 public enrollment forecast by ethnic group within grade and census tract is calculated as the product of the population forecast by ethnic group within census tract for the forecast year times the percent CY enrollment by ethnic group and grade per 1000 in the CY population by ethnic group. For example, the population forecast for Blacks in grade 2 in census tract 3 for year Y1 equals the Black population forecasted for census tract 3 in year Y1 times the ratio of CY Black enrollment in grade 2 to the CY Black population forecast.

The CY and Y1-Y5 public enrollment forecast by ethnic group by grade by school within a census tract is calculated as the product of the public enrollment forecast by ethnic group within grade and census tract times the percent assignment of a census tract to a school service area. This calculation is performed for every school provided the grade, PK up to 12, is taught at the particular school. Accordingly, the calculation is performed for grades PK to 6 if the school is an elementary school, grades 7 to 9 for a junior high, and 10-12 for the senior high school. The enrollment forecast is aggregated across all census tract by school to produce the public enrollment forecast by ethnic group within grade and school.

Sample enrollment forecast reports by ethnic group within grade and school are provided for an elementary school a junior high school, and the senior high school. Refer to the next three pages for these samples (enrollment forecast calculated.)

When the enrollment override option is exercised the report is flagged with the following descriptor: "ENROLLMENT OVERRIDE EXERCISED - USER REVISION TO ENROLLMENT FORECAST FOR THIS SCHOOL." A sample report for which the override option was used is shown on the page after the aforementioned three reports. (See Page 22)

TRENTON SCHOOL DISTRICT
ENROLLMENT FORECAST BY ETHNIC GROUP WITHIN GRADE AND SCHOOL

REPORT NO. TSDENR-1007
RUN DATE:FEB. 8,1972

SCHOOL: CADWALADER SCHOOL

GRADE	ETHNIC GROUP	1971	1972	1973	1974	1975	1976
PK	BLACK	0.	0.	0.	0.	0.	0.
	SPANISH	0.	0.	0.	0.	0.	0.
	OTHER	0.	0.	0.	0.	0.	0.
	TOTAL	0.	0.	0.	0.	0.	0.
K	BLACK	68.	82.	86.	91.	96.	101.
	SPANISH	8.	13.	13.	14.	15.	15.
	OTHER	1.	13.	13.	12.	12.	12.
	TOTAL	77.	108.	112.	117.	123.	128.
1ST	BLACK	85.	80.	90.	95.	100.	105.
	SPANISH	12.	13.	14.	15.	15.	16.
	OTHER	1.	12.	11.	11.	11.	10.
	TOTAL	98.	111.	116.	121.	126.	132.
2ND	BLACK	92.	83.	87.	92.	97.	102.
	SPANISH	6.	12.	12.	13.	14.	15.
	OTHER	3.	11.	11.	11.	10.	10.
	TOTAL	103.	106.	110.	115.	121.	126.
3RD	BLACK	92.	90.	95.	100.	105.	111.
	SPANISH	4.	11.	11.	12.	13.	13.
	OTHER	0.	12.	11.	11.	11.	10.
	TOTAL	96.	113.	118.	123.	129.	135.
4TH	BLACK	80.	82.	87.	91.	96.	101.
	SPANISH	13.	11.	12.	12.	13.	14.
	OTHER	1.	11.	11.	11.	11.	10.
	TOTAL	94.	105.	110.	115.	120.	125.
5TH	BLACK	81.	78.	82.	87.	91.	96.
	SPANISH	4.	10.	10.	11.	11.	12.
	OTHER	0.	12.	12.	11.	11.	11.
	TOTAL	85.	100.	104.	109.	113.	119.
6TH	BLACK	0.	78.	82.	88.	91.	96.
	SPANISH	0.	10.	10.	11.	11.	12.
	OTHER	0.	11.	11.	10.	10.	10.
	TOTAL	0.	99.	103.	108.	113.	118.
TOTAL	BLACK	498.	580.	610.	642.	676.	712.
	SPANISH	49.	75.	83.	88.	92.	97.
	OTHER	6.	81.	79.	78.	76.	74.
PR-K	BLACK	68.	82.	86.	91.	96.	101.
	SPANISH	8.	13.	13.	14.	15.	15.
	OTHER	1.	13.	13.	12.	12.	12.
1-3	BLACK	269.	259.	272.	287.	302.	318.
	SPANISH	24.	36.	38.	40.	42.	44.
	OTHER	4.	34.	33.	33.	32.	31.
4-6	BLACK	161.	239.	251.	264.	278.	293.
	SPANISH	17.	30.	32.	34.	36.	37.
	OTHER	1.	34.	33.	33.	32.	31.

TRENTON SCHOOL DISTRICT
ENROLLMENT FORECAST BY ETHNIC GROUP WITHIN GRADE AND SCHOOL

REPORT NO. TSDENR-1026
RUN DATE:FEB. 8,1972

SCHOOL: JUNIOR 2

GRADE	ETHNIC GROUP	1971	1972	1973	1974	1975	1976
7TH	BLACK	201.	133.	140.	147.	155.	163.
	SPANISH	15.	13.	14.	15.	15.	16.
	OTHER	71.	60.	59.	56.	56.	55.
	TOTAL	287.	206.	212.	219.	226.	234.
8TH	BLACK	176.	115.	121.	128.	135.	142.
	SPANISH	12.	12.	13.	14.	14.	15.
	OTHER	88.	66.	64.	63.	61.	60.
	TOTAL	276.	193.	199.	204.	210.	217.
9TH	BLACK	151.	102.	107.	113.	119.	125.
	SPANISH	16.	10.	10.	11.	11.	12.
	OTHER	56.	66.	64.	63.	62.	60.
	TOTAL	263.	178.	182.	187.	192.	197.
TOTAL	BLACK	528.	350.	368.	388.	408.	430.
	SPANISH	43.	35.	37.	39.	41.	43.
	OTHER	255.	192.	188.	184.	179.	175.
7-9	BLACK	528.	350.	368.	388.	408.	430.
	SPANISH	43.	35.	37.	39.	41.	43.
	OTHER	255.	192.	188.	184.	179.	175.

TRENTON SCHOOL DISTRICT
ENROLLMENT FORECAST BY ETHNIC GROUP WITHIN GRADE AND SCHOOL

REPORT NO. TSDENR-1030
RUN DATE:FEB. 8,1972

SCHOOL: TRENTON HIGH SCHOOL

GRADE	ETHNIC GROUP	1971	1972	1973	1974	1975	1976
10TH	BLACK	828.	872.	917.	966.	1017.	1070.
	SPANISH	68.	72.	75.	79.	83.	88.
	OTHER	273.	267.	261.	256.	250.	243.
	TOTAL	1169.	1210.	1254.	1301.	1350.	1401.
11TH	BLACK	622.	655.	689.	725.	764.	804.
	SPANISH	47.	49.	52.	55.	58.	61.
	OTHER	225.	220.	215.	211.	206.	200.
	TOTAL	894.	924.	957.	991.	1027.	1065.
12TH	BLACK	579.	609.	642.	675.	711.	748.
	SPANISH	30.	32.	33.	35.	37.	39.
	OTHER	283.	277.	271.	265.	259.	252.
	TOTAL	892.	918.	946.	975.	1007.	1039.
TOTAL	BLACK	2029.	2136.	2248.	2367.	2491.	2622.
	SPANISH	145.	153.	161.	169.	176.	187.
	OTHER	781.	764.	748.	732.	715.	695.
10-12	BLACK	2029.	2136.	2248.	2367.	2491.	2622.
	SPANISH	145.	153.	161.	169.	176.	187.
	OTHER	781.	764.	748.	732.	715.	695.

TRENTON SCHOOL DISTRICT
ENROLLMENT FORECAST BY ETHNIC GROUP WITHIN GRADE AND SCHOOL

REPORT NO. TSDENR-1012
RUN DATE:FEB. 8,1972

INPUT OVERRIDE EXERCISED-USER REVISION
TO ENROLLMENT FORECAST FOR THIS SCHOOL
SCHOOL: JUNIOR 2 ELEMENTARY

GRADE	ETHNIC GROUP	1971	1972	1973	1974	1975	1976
PK	BLACK	0.	0.	0.	0.	0.	0.
	SPANISH	0.	0.	0.	0.	0.	0.
	OTHER	0.	0.	0.	0.	0.	0.
	TOTAL	0.	0.	0.	0.	0.	0.
K	BLACK	37.	59.	62.	65.	69.	72.
	SPANISH	9.	9.	10.	10.	11.	11.
	OTHER	42.	36.	35.	34.	33.	32.
	TOTAL	88.	104.	107.	110.	112.	115.
1ST	BLACK	35.	62.	65.	68.	72.	76.
	SPANISH	6.	10.	10.	11.	11.	12.
	OTHER	45.	32.	32.	31.	30.	29.
	TOTAL	86.	104.	107.	110.	113.	117.
2ND	BLACK	31.	60.	63.	66.	69.	73.
	SPANISH	9.	9.	9.	9.	10.	10.
	OTHER	38.	31.	30.	29.	28.	27.
	TOTAL	78.	99.	102.	104.	107.	110.
3RD	BLACK	48.	65.	68.	72.	74.	79.
	SPANISH	7.	8.	9.	8.	9.	10.
	OTHER	50.	32.	32.	31.	31.	29.
	TOTAL	105.	105.	109.	111.	114.	118.
4TH	BLACK	39.	53.	63.	66.	69.	72.
	SPANISH	10.	8.	8.	9.	9.	10.
	OTHER	49.	32.	31.	30.	30.	29.
	TOTAL	98.	100.	102.	105.	108.	111.
5TH	BLACK	70.	56.	59.	62.	65.	69.
	SPANISH	12.	7.	7.	8.	8.	9.
	OTHER	50.	33.	32.	31.	30.	29.
	TOTAL	132.	96.	98.	101.	104.	107.
6TH	BLACK	97.	56.	59.	62.	65.	69.
	SPANISH	12.	7.	7.	8.	8.	8.
	OTHER	48.	31.	30.	29.	28.	27.
	TOTAL	147.	94.	96.	99.	101.	104.
TOTAL	BLACK	347.	418.	439.	461.	486.	510.
	SPANISH	65.	57.	60.	63.	66.	69.
	OTHER	322.	228.	221.	215.	209.	203.
PK-K	BLACK	37.	59.	62.	65.	69.	72.
	SPANISH	9.	9.	10.	10.	11.	11.
	OTHER	42.	36.	35.	34.	33.	32.
1-3	BLACK	114.	187.	196.	206.	217.	228.
	SPANISH	22.	26.	27.	29.	30.	32.
	OTHER	133.	96.	93.	91.	88.	85.
4-6	BLACK	196.	172.	181.	190.	200.	210.
	SPANISH	34.	22.	22.	24.	26.	27.
	OTHER	147.	96.	93.	90.	88.	86.

Public enrollment forecast by ethnic group within grade and school was previously calculated. Refer to the description of the School Enrollment Forecast Report for details on this calculation. The CY and Y1-Y5 enrollment forecast by ethnic group within grade is calculated by aggregating school enrollments by ethnic group and grade over all schools. The CY and Y1-Y5 enrollments by ethnic group within grade is summed by grade over all ethnic groups to obtain the CY and Y1-Y5 enrollment forecast by grade.

TRENTON SCHOOL DISTRICT
PUBLIC ENROLLMENT FORECAST BY GRADE LEVEL

REPORT NO. TSDENR-1031
RUN DATE: FEB. 8,1972

GRADE LEVEL	1971	1972	1973	1974	1975	1976
PK	0.	0.	0.	0.	0.	0.
K	1436.	1487.	1542.	1599.	1660.	1723.
1ST	1452.	1507.	1564.	1626.	1690.	1757.
2ND	1387.	1439.	1495.	1553.	1615.	1679.
3RD	1477.	1533.	1592.	1655.	1721.	1790.
4TH	1385.	1438.	1490.	1548.	1609.	1672.
5TH	1327.	1375.	1425.	1479.	1535.	1594.
6TH	1305.	1353.	1404.	1458.	1515.	1574.
7TH	1391.	1442.	1496.	1554.	1614.	1677.
8TH	1283.	1326.	1372.	1421.	1473.	1526.
9TH	1184.	1201.	1240.	1282.	1327.	1372.
10TH	1169.	1210.	1254.	1301.	1350.	1401.
11TH	854.	924.	957.	991.	1027.	1065.
12TH	852.	916.	946.	975.	1007.	1039.
TOTAL	16582.	17152.	17776.	18441.	19144.	19869.

Current year secondary enrollment by ethnic group within secondary program is input. The secondary programs for which enrollment is currently forecasted are Vocational-Technical and Regular or Non-Vocational.

The percent racial composition of each secondary program by ethnic group within secondary program for the current year is calculated by dividing total CY enrollment in secondary programs by ethnic group into secondary enrollment by ethnic group within secondary program.

The CY and Y1-Y5 public enrollment forecast by ethnic group within secondary program is calculated as the product of the secondary program enrollment forecast by ethnic group by year times the 1970 percent racial composition of each secondary program by ethnic group by secondary program. Refer to the descriptions of the School Enrollment Forecast Report, Grade Enrollment Forecast Report, and the Program Enrollment Forecast Report for more details concerning the calculation of the secondary program enrollment forecast.

TRENTON SCHOOL DISTRICT
SECONDARY ENROLLMENT FORECAST BY PROGRAM

REPORT NO. TSDENR-1033
RUN DATE:FEB. 8,1972

1-CURRENT YEAR SECONDARY ENROLLMENT BY ETHNIC GROUP WITHIN PROGRAM

SECONDARY PROGRAMS	BLACK	SPANISH	OTHER	TOTAL
NON VOCATIONAL TECHNICAL	1041.	68.	535.	1644.
VOCATIONAL-TECHNICAL	988.	77.	246.	1311.
TOTAL	2029.	145.	781.	2955.

2-PERCENTAGE COMPOSITION OF EACH SECONDARY PROGRAM BY ETHNIC GROUP WITHIN PROGRAM FOR THE CURRENT YEAR

SECONDARY PROGRAMS	BLACK	SPANISH	OTHER
NON VOCATIONAL TECHNICAL	51.306	46.897	68.502
VOCATIONAL-TECHNICAL	48.694	53.103	31.498

3-PUBLIC ENROLLMENT FORECAST BY ETHNIC GROUP AND YEAR WITHIN SECONDARY PROGRAM

SECONDARY PROGRAMS	ETHNIC GROUP	1972	1973	1974	1975	1976
NON VOCATIONAL TECHNICAL	BLACK	1096.	1153.	1214.	1278.	1345.
	SPANISH	72.	75.	79.	83.	88.
	OTHER	524.	512.	501.	490.	476.
	TOTAL	1691.	1741.	1795.	1851.	1909.
VOCATIONAL-TECHNICAL	BLACK	1040.	1095.	1152.	1213.	1277.
	SPANISH	81.	85.	90.	95.	100.
	OTHER	241.	236.	230.	225.	219.
	TOTAL	1362.	1416.	1473.	1533.	1595.
PROGRAMMATIC TOTALS						
NON VOCATIONAL TECHNICAL		1691.	1741.	1795.	1851.	1909.
VOCATIONAL-TECHNICAL		1362.	1416.	1473.	1533.	1595.

CY and Y1-Y5 enrollment forecasts by ethnic group within program is obtained by aggregating school enrollment forecasts by ethnic group within grade groupings (PK-K, 1-3, 4-6, 7-9, and 10-12) across all schools.

TRENTON SCHOOL DISTRICT
PUBLIC ENROLLMENT FORECAST BY PROGRAM

REPORT NO. TSDENR-1032
RUN DATE:FEB. 8,1972

PROGRAM	ETHNIC GROUP	1971	1972	1973	1974	1975	1976
EARLY CHILDHOOD	BLACK	959.	1009.	1063.	1119.	1177.	1239.
	SPANISH	147.	155.	163.	171.	180.	190.
	OTHER	330.	323.	316.	309.	302.	294.
	TOTAL	1436.	1487.	1542.	1599.	1660.	1723.
PRIMARY(1-3)	BLACK	3023.	3182.	3350.	3526.	3712.	3907.
	SPANISH	420.	442.	465.	490.	516.	543.
	OTHER	873.	855.	836.	818.	799.	777.
	TOTAL	4316.	4479.	4651.	4834.	5026.	5227.
ELEMENTARY(4-6)	BLACK	2786.	2933.	3087.	3250.	3421.	3601.
	SPANISH	356.	375.	394.	415.	437.	460.
	OTHER	875.	857.	838.	820.	801.	778.
	TOTAL	4017.	4164.	4320.	4484.	4659.	4839.
INTERMEDIATE(7-9)	BLACK	2616.	2736.	2901.	3054.	3214.	3384.
	SPANISH	265.	279.	294.	309.	325.	342.
	OTHER	955.	955.	915.	894.	874.	850.
	TOTAL	3836.	3970.	4109.	4257.	4414.	4576.
SECONDARY(10-12)	BLACK	2029.	2136.	2248.	2367.	2491.	2622.
	SPANISH	145.	153.	161.	169.	178.	187.
	OTHER	781.	764.	748.	732.	715.	695.
	TOTAL	2955.	3053.	3157.	3267.	3384.	3505.

The CY and Y1-Y5 public enrollment forecast by ethnic group within grade and school was previously calculated. Enrollment forecast totals by school and year for CY and Y1-Y5 are obtained by aggregating enrollments by school over all grades and ethnic groups in the school.

TRENTON SCHOOL DISTRICT
PUBLIC ENROLLMENT FORECAST TOTALS BY SCHOOL AND YEAR

REPORT NO. TSDENR-1034
RUN DATE:FEB. 8,1972

SCHOOL NAME	1971	1972	1973	1974	1975	1976
CADWALADER SCHOOL	553.	740.	773.	807.	844.	882.
COLUMBUS SCHOOL	306.	484.	500.	518.	537.	557.
COOK SCHOOL	512.	284.	294.	306.	318.	331.
FRANKLIN SCHOOL	378.	208.	205.	201.	198.	194.
GRANT SCHOOL	870.	542.	568.	595.	623.	653.
GREGORY SCHOOL	704.	703.	736.	771.	808.	846.
HARRISON SCHOOL	329.	248.	245.	243.	240.	238.
JEFFERSON SCHOOL	692.	1123.	1177.	1233.	1292.	1353.
JUNIOR 2 ELEMENTARY	734.	704.	724.	746.	769.	793.
JUNIOR 3 ELEMENTARY	428.	542.	557.	573.	590.	608.
JUNIOR 5 ELEMENTARY	506.	671.	704.	739.	775.	810.
MONUMENT SCHOOL	442.	630.	661.	693.	728.	761.
MOTT SCHOOL	321.	210.	213.	216.	219.	223.
PARKER SCHOOL	829.	617.	642.	668.	695.	725.
ROBBINS SCHOOL	710.	730.	755.	782.	810.	840.
STOKES SCHOOL	701.	675.	705.	737.	770.	805.
WASHINGTON SCHOOL	370.	233.	230.	228.	225.	223.
WILSON SCHOOL	384.	785.	823.	862.	904.	948.
TOTAL ELEMENTARY	9769.	10130.	10512.	10917.	11345.	11789.
JUNIOR 1	866.	1215.	1269.	1327.	1387.	1450.
JUNIOR 2	828.	577.	593.	611.	629.	648.
JUNIOR 3	907.	1002.	1041.	1083.	1127.	1173.
JUNIOR 4	789.	902.	922.	943.	966.	988.
JUNIOR 5	448.	274.	283.	294.	305.	316.
TRENTON HIGH SCHOOL	2955.	3053.	3157.	3267.	3384.	3505.
TOTAL SECONDARY	6793.	7023.	7266.	7524.	7798.	8080.
GRAND TOTAL	16562.	17152.	17778.	18441.	19144.	19869.

Current year Special Education enrollment by ethnic group within level is input. A current year Special Education enrollment factor by ethnic group within level is calculated as the ratio of CY Special Education enrollment by ethnic group within level divided by CY population forecast by ethnic group.

The CY and Y1-Y5 Special Education public enrollment forecast equals the product of the total population forecast by ethnic group times the Special Education enrollment factor by ethnic group within level.

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                                      TRENTON SCHOOL DISTRICT                                  REPORT NO. TSDENR-1035
                              PUBLIC ENROLLMENT FORECAST FOR SPECIAL EDUCATION                 RUN DATE:FEB. 6,1972

ENROLLMENT FACTORS: SPECIAL EDUCATION ENROLLMENT FACTOR PER THOUSAND
                    IN POPULATION BY ETHNIC GROUP FOR THE CY  1971

     LEVEL                        BLACK          SPANISH           OTHER

      ELEMENTARY                  0.980            0.440           0.109

      SECONDARY                   0.596            0.220           0.045


ENROLLMENT FORECAST

  LEVEL          ETHNIC GROUP     1971          1972          1973          1974          1975          1976

   ELEMENTARY     BLACK           354.          451.          548.          644.          741.          837.
                  SPANISH          24.           25.           27.           28.           29.           31.
                  OTHER            73.           71.           70.           68.           67.           65.
                  TOTAL           451.          548.          644.          741.          837.          933.

   SECONDARY      BLACK           214.          256.          298.          340.          382.          424.
                  SPANISH          12.           13.           13.           14.           15.           16.
                  OTHER            30.           29.           29.           28.           27.           27.
                  TOTAL           256.          298.          340.          382.          424.          467.

   TOTAL          BLACK           568.          707.          846.          984.         1123.         1261.
                  SPANISH          36.           38.           40.           42.           44.           47.
                  OTHER           103.          101.           99.           96.           94.           92.
                  TOTAL           707.          846.          984.         1123.         1261.         1400.
```

The current year Continuing Education enrollment by ethnic group is input. A Continuing Education enrollment factor by ethnic group is calculated as CY Continuing Education enrollment by ethnic group divided by CY total population forecast by ethnic group.

The CY and Y1-Y5 Continuing Education enrollment forecast is the product of the Continuing Education enrollment factor by ethnic group times the total population forecast by ethnic group by year.

TRENTON SCHOOL DISTRICT
PUBLIC ENROLLMENT FORECAST FOR CONTINUING EDUCATION

REPORT NO. TSDENR-1036
RUN DATE:FEB. 8,1972

CONTINUING EDUCATION ENROLLMENT FACTOR BY ETHNIC
GROUP PER THOUSAND IN THE POPULATION FOR CY 1971

BLACK	SPANISH	OTHER
2.960	5.653	0.013

ENROLLMENT FORECAST

ETHNIC GROUP	1971	1972	1973	1974	1975	1976
BLACK	1063.	1119.	1178.	1240.	1305.	1374.
SPANISH	319.	336.	353.	372.	392.	412.
OTHER	9.	9.	9.	8.	8.	8.
TOTAL	1391.	1464.	1540.	1620.	1705.	1794.

The following CY and Y1-Y5 enrollment forecasts categores were calculation internally from detail data levels previously produced: Kindergarten (Grade Forecast Report) Grades 1 to 6 (Program and Grade Forecast Reports), Grades 7 to 9 (Program Report), Grades 10-12 (Program Report), Vocational-Technical (Secondary Program Report), Shared Time A.V.T.S. (Continuing Education Report), and Special Classes (Special Education Report).

The Aid for Dependent Children Forecast for the CY and Y1-Y5 is obtained by multiplying total public enrollment by year times the percentage of school age children in the TPS receiving AFDC during the current year. This latter percent was input previously.

ENROLLMENT FORECAST INPUT FOR REVENUE SIMULATOR

	1971	1972	1973	1974	1975	1976
KINDERGARTEN	1436.	1487.	1542.	1595.	1660.	1723.
GRADES 1 TO 6	8335.	8643.	8971.	9316.	9685.	10066.
GRADES 7 TO 9	3838.	3970.	4109.	4257.	4414.	4576.
GRADES 10 TO 12-REGULAR	1644.	1859.	1912.	1968.	2028.	2088.
GRADES 10 TO 12-VOC-TECH	1311.	1220.	1261.	1304.	1350.	1397.
CONTINUING EDUCATION	1391.	1464.	1540.	1620.	1705.	1794.
SPECIAL CLASSES	707.	846.	984.	1123.	1261.	1400.
ESTIMATE OF AFDC IN TFS	826.	858.	889.	922.	957.	993.

III.3 The Cost/Resource Requirements Module

INTRODUCTION AND CONCEPTUAL DESIGN

Main Functions of the Forecaster

STEP's Cost/Resource Requirements forecaster (RRM), is a set of manual and automated procedures for determining important probable information about existing and new programs in the district. As in all the forecasting procedures in the system, it is contingent upon important assumptions and estimates, which are made explicity, and which can be revised to produce alternate runs of the forecaster. Given these assumptions (which are discussed in some detail later), the forecaster produces four main reports: The Planning Unit Report; the Program Report; the Project Report; and the Site Report. Each report includes the following information:

(1) The number of positions, by each of fifteen staff types, for Year 1-Year 5.

(2) The salary cost, fringe benefit cost, and total, for Year 1-Year 5.

(3) The total capital outlay cost, Year 1-Year 5.

(4) The total non- staff/non-capital outlay cost, Year 1-Year 5.

(5) The total gross cost, and the total local cost.

(6) The total expected positions, by staff type, and total "hires," Year 1-Year 5.

(7) Subsidiary data on planning factors.

These data elements are relatively constant in each of the reports generated by the module; the differences are in the level or focus of aggregation. In the Planning Unit Report, the above information is displayed for each of the district's "planning units" - a concept to be described below. In the Program Report, the information is aggregated in "programs," according to the district's program structure; this report may be viewed as the "program budget" for the district, and will be produced to show actual expenditures for Current Year, as well as projected expenditures for Year 1-Year 5 in alternative plans. In the Project Report, planning unit information is re-aggregated into project summaries, and in the Site Report, planning unit information is aggregated to provide summaries of cost and resource requirements by site - a report that will prove especially interesting and valuable to building administrators. There will, then, be a program budget for each planning unit in the district, for each program, for each project, and for each site.

There are several functions served by this module. Obviously, it is important to project the staff and financial resources required to continue current programs or future alternatives. In addition, it is quite instructive to observe the relative allocations among the district's various programs, or compare the unit costs in the various programs and projects of the district. In addition, the complicated effects of such variables as inflation and staff turnover rates are reflected in the forecasts, in a way that would be almost infeasible without automated computation of thousands of calculations.

The information in these reports also serves basic planning functions as well. The module allows for experimentation with various "planning factors," that is, assumed parametric relationships between activity and expenditure. It provides the cost data that will be used in cost-utility evaluation of alternative plans, and the feasibility data which will be used to set limits on posible courses of action. Perhaps most importantly, however, the cost/resource requirements forecasts allow, at several levels in the district, a sophisticated evaluation of proposed expenditures, and an after-the-fact assessment of whether resources have been used effectively. The last mentioned functions can only be realized when the forecasts are used in conjunction with other aspects of the STEP system. These interfaces are discussed below.

Interfaces with the Cost/Resource Requirements Forecaster

An important input to the RRM is the data from the enrollment forecasting procedure. Most school expenditures, particularly in instructional services, are presumed to vary as a function of changes in type and number of students. The RRM gives its users the option to use "enrollment base" as a planning factor in projecting several costs.

The output of RRM also interfaces with other system components. Cost data is fed, for instance, into the Revenue Forecaster, and used as the basis of the calculation of necessary revenues in conjunction with alternative plans; data on State-reimbursable program costs, such as Transportation and Special Education, is also fed to the Revenue Forecaster.

Perhaps most significantly, cost data is fed into the manual cost-utility evaluation procedure, the key decision-point in the system. When conjoined with projections of performance and revenue, the cost data allows the district's policy-makers to identify that alternative plan which promises accomplishment of the largest magnitude of district goals within allowable cost constraints.

Conceptual Design and Data Flow

RRM operates by taking detailed, current year data about the "planning units" in the district, along with other inputs about staff costs and turnover in the district, and, using a combination of forecast options available to the planners, projects the five-year staff requirements and costs for each planning unit. These planning units are then aggregated into larger clusters, e.g., programs, projects, sites, or the whole district, to produce the main planning reports.

The data on which the forecasts are based is relatively simple. For each planning unit, users input identification data and information about the current staff, capital outlay, and other resources being utilized in the unit. In addition, appropriate enrollment information (taken from the enrollment forecasting procedure) is input to the planning unit description, along with estimates of categorical or "project" grants expected to accrue to the unit. After data is collected for each planning unit, district data is added: mainly, the "fringe benefit percentage" associated with each staff type, the expected turnover rates associated with each type, and the forecast options chosen for each resource type in each planning unit. The resource requirements model then proceeds to incorporate the effects of enrollment change, inflation, turnover rates, and other relevant variables, according to the forecast options selected by the users, and produce cost/resource requirements projections for Year 1-Year 5. In the "base case" plan, data about actual and approved planning units is input to the model; in alternative plans, planning units derived from "project designs" are added to planning unit card deck to generate alternative cost/resource requirement forecasts. Chart III.3 - 1, shows the summary flow of information and calculation in the forecaster. A more detailed description of the computational flow and outputs is provided later.

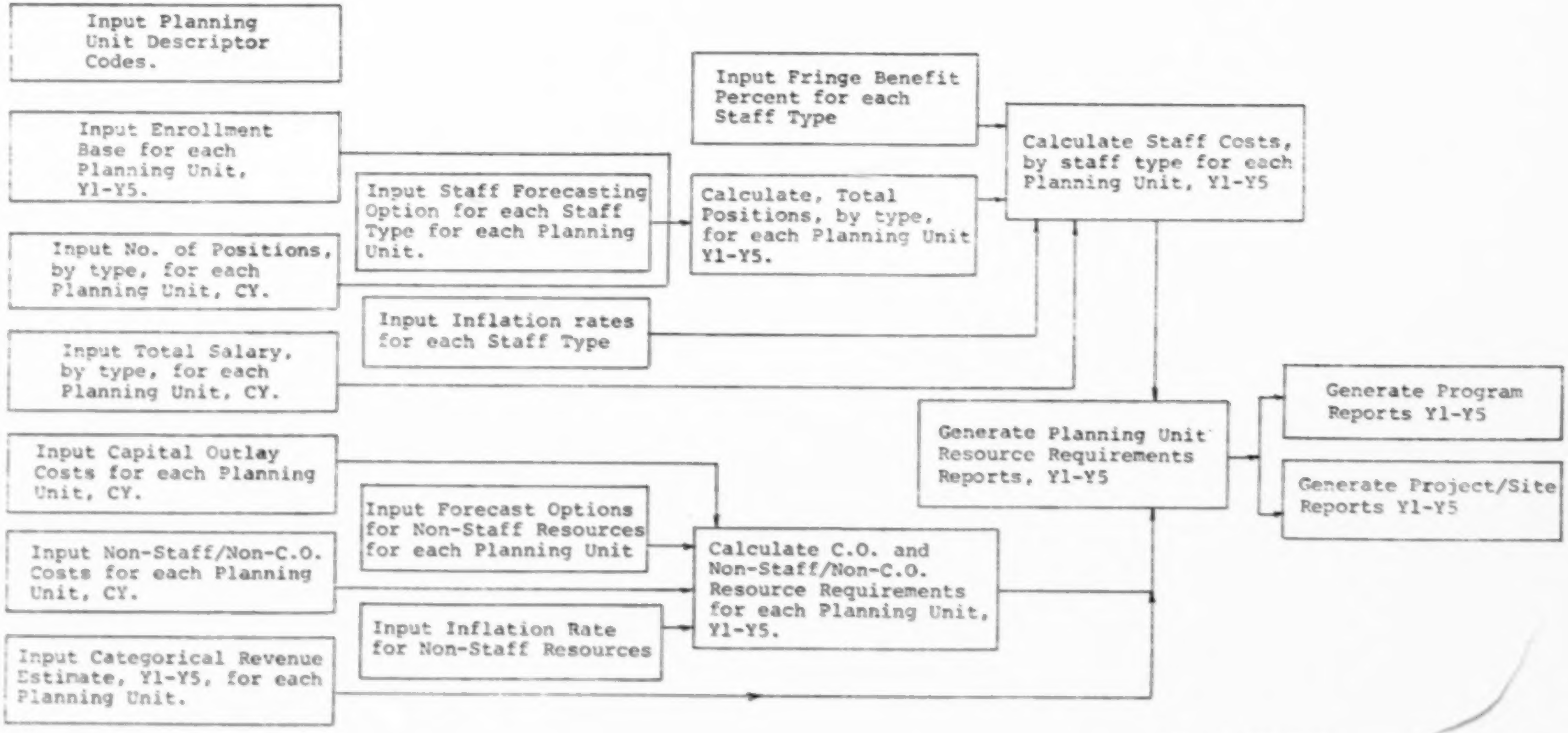
Input Planning Unit Descriptor Codes.
Input Enrollment Base for each Planning Unit, Y1-Y5.
Input No. of Positions, by type, for each Planning Unit, CY.
Input Total Salary, by type, for each Planning Unit, CY.
Input Capital Outlay Costs for each Planning Unit, CY.
Input Non-Staff/Non-C.O. Costs for each Planning Unit, CY.
Input Categorical Revenue Estimate, Y1-Y5, for each Planning Unit.
Input Staff Forecasting Option for each Staff Type for each Planning Unit.
Input Inflation rates for each Staff Type
Input Forecast Options for Non-Staff Resources for each Planning Unit
Input Inflation Rate for Non-Staff Resources
Input Fringe Benefit Percent for each Staff Type
Calculate, Total Positions, by type, for each Planning Unit Y1-Y5.
Calculate C.O. and Non-Staff/Non-C.O. Resource Requirements for each Planning Unit, Y1-Y5.
Calculate Staff Costs, by staff type for each Planning Unit, Y1-Y5
Generate Planning Unit Resource Requirements Reports, Y1-Y5
Generate Program Reports Y1-Y5
Generate Project/Site Reports Y1-Y5

Chart III.3-1

Summary Flow; Cost/Resource Requirements Forecaster

Basic Elements of the Model: Clarification

Planning Unit Concept

STEP's cost/resource requirements forecaster has certain unique and innovative feastures which make it highly flexible and adaptive to changes in management organization in the district; unlike other program-budgeting systems, it allows the user to change program structures, or sustain several program structures at once, without re-programming the software. The entity which allows this flexibility - the "planning unit" - is an important concept, therefore. The use of the planning unit concept, while giving extraordinary flexibility and freedom to the user, on the one hand, poses analytical problems on the other.

A planning unit is, to an extent, and undefined term. It is the smallest cost-activity center used in STEP, but its size and boundaries are not specified. A planning unit is a cluster of instructional or support activities, sharing common objectives and management, existing in one school or site, in one program. Thus, it follows, that the entire educational program of a school may be a single planning unit with an enrollment base of 4,000 students, or a single class in and elementary school can be a planning unit, with an enrollment base of 30. A planning unit may be a course, a class, a grade level within a school, or a whole school - as long as it is located in one site, and is entirely in one program. Therefore, Elementary Instruction cannot be a planning unit - because it exists in about 20 sites, and Title I cannot be a planning unit - because it exists in several sites and at least three programs. (The district's program structure is discussed later in this section.) Because Junior High No. 5 has a K-9 grade spread, there must be at least one planning unit for each of the Early Childhood, Primary, Elementary, and Intermediate sub-programs in that school - a minimum of four planning units. In contrast, Trenton Central High School, given the current program structure, conducts activities which are all part of the Secondary Instruction program, so that, except for reasons to be discussed later, it could be described in one planning unit - although clearly this would be undesirable.

Obviously, it is an option of the users to define the boundaries of planning units within these constraints. While Junior 5 must have at least four planning units, and TCH at least one, there is no upper limit on how many they may have, or, in other words, how small the planning units may be. TCH may divide its program by Vocational/Non-Vocational, or by grades, or by subject matters, or by "houses," or any other organization judged appropriate in the particular planning period. For the first iteration of the planning system, we propose that TCH be divided by Vocational/Non-Vocational and grade level, for a total of at least six planning units.

Whatever organization scheme is used to define planning unit boundaries, it is important that each planning unit have certain characteristics. First, there must be persons, materials, facilities, and equipment that are clearly "billable," or assignable to the planning unit. (Of course, many persons will be charged fractionally to planning units, as a function of the time they work in that planning unit.) Further, the planning unit must define an entity of some kind, a functionally unified activity-cost center, such that one can make judgements about the whole unit and implement changes in the whole planning unit. In the case of planning unit's which are part of instructional programs, each planning unit will have a well-defined student client group; in fact, instructional planning unit's may be best defined in terms of the students affected. In support planning unit's there will be no student client group, generally, but rather a function or service defining the planning unit's boundaries.

In STEP, each year the authorizations shown in the Line-item budget are "crosswalked" to appropriate planning units, that is, for each object of expenditure, staff or non-staff, some portion of the dollar amount is charged to a given planning unit. If a given staff member works in several planning unit's, his salary is pro-rated across the planning unit's, either as a function of time spent in each, or as a function of enrollment in each. (A principal who worked only in instructional programs in his school would be pro-rated across the planning units in that school, proportionate to the enrollment in each planning unit.) Each dollar authorized in the budget is charged to exactly one planning unit; any duplication or undercounting will obviate the cost analysis procedure. These pro-ratings and fractional assignments, as in any accounting system, may be arbitrary on occasion; but the arbitrary rules must be used consistently and uniformly throughout the cost analysis phase.

The total of all costs charged to all planning units, therefore, should exactly equal the Current Year budget. Similarly, when a plan has been approved, the total costs of all planning units for Year One should exactly equal the approved budget for Year One. (The approved program budget for Year One is "crosswalked" back into a line-item format.) It is estimated that there will be between 90 and 120 planning units in the entire school district each year, given the current program structure. The number can change, of course, if the program structure or program definitions change.

A qualitative goal of STEP is to, whenever possible, assign costs to instructional planning units. Thus, in a given building, administrative, clerical, and maintainence personnel are pro-rated across the instructional planning units in that building. Any resource which cannot be reasonably charged to an instructional planning unit may be charged to one of the district's support planning units.

Each planning unit has a status: it is either a sub-program, project, or "project design." A sub-program is that portion of a program assigned to a single site; it is called a sub-program because it is presumed that it will continued to exist indefinitely, that when its objectives are accomplished it will develop new objectives. A project, however, is not assumed to exist indefinitely - frequently because it has a limited grant life of three-five years; when a project accomplishes its objectives, it goes away. A "project design" planning unit is an idea for a project, developed during the generation of alternatives phase of planning; it is a proposed or hypothetical project, included in the cost/resource requirements forecast deck to simulate its multi-year consequences on the district's plan. Note that if a project or "project design" exists in more than one school/site, there must be at least as many different planning units as there are sites, and if a project or project design cuts across more than one program, there must be at least as many planning units as there are programs affected.

The planning unit concept, thus, is highly useful but poses some difficulties in implementation. There will be, no doubt, several experiments with the scope and definition of planning units before a fully satisfactory set is developed. Whatever scheme is finally developed, however, the planning unit will be the focus of cost/resource requirements projection.

The model presented here actually computes the five-year requirements for each planning unit, and then aggregates into programs, project, and sites.

DATA INPUT FOR A PLANNING UNIT

Certain data is input for each planning unit. First, the number of positions for each of the staff types is entered, along with the total salary for each staff type in the planning unit for the current year. (Planning units which have no current year operation are entered differently, as explained in the data preparation section of this explanation.) In addition, Current Year authorizations for Capital Outlay and Non-Staff/Non-C.O. costs are entered. Other data includes the enrollment base used for calculation purposes and the categorical revenues associated with the planning unit. Enrollment base is not identical to enrollment; the enrollment base is the preferred denominator to be used in forecasting resource requirements as a ratio to students; that is, certain resources, notably teachers and consumable supplies, are presumed to vary with planning unit enrollment; in non-instructional planning units, however, there is frequently also an enrollment base for projection, either the entire student body or some selected proportion of it. Transportation Services may vary as a function of the number of handicapped in the district, for example, or Food Services as a function of AFDC children. Thus, in inputing the enrollment base for a planning unit, the analyst identifies the relevant parametric relationship between resources and demand (students), or, if he believes there is no such relationship, he uses one of the other forecasting options: holding resources constant (but inflated in cost), or directly estimating for Y1-Y5.

District-Level Data Input

In addition to data collected about each Planning Unit, there are also important inputs from the district level, mainly inflation rates for various staff and resource types, and turnover rates for each staff type. In addition, a "fringe benefit percentage" is input for each staff type, meaning the fraction of base salary expended for contributions to pension, social security, etc.

Data Collection Considerations

The data input from the district level, as well as the Planning Unit level, poses some special problems for persons new to longer-range planning. It may be objected that certain of the requisite inputs are not now available, in some cases, or unknowable, in others. These problems emerge in most of the planning procedures, but particularly in connection with the resource requirements analysis. To place the problem in perspective, consider the following classes of data:

(1) Factual - historical, e.g., expenditures and enrollments in the present or past.

(2) Factual - future, e.g., future costs and enrollments.

(3) Assumptions - testable, e.g., inflation rates.

(4) Assumptions - non-testable, e.g., "desired" expenditures and ratios.

These four kinds of data are all used in planning, particularly in resource requirements analysis, and for each kind of data there is "good" and "bad" data that may be introduced. For type (1), the good data is based on actual records and information, reliably gathered, in the districts files, while the less good data is based on rough estimations of what that data is (or was) in the absence of hard facts. For data type (2) the good data is based on reliable forecasting and prediction procedures, while the less good data is based on hunches and speculation. In general, the district should implement all procedures -- mainly data-gathering procedures -- which will improve the quality of data types (1) and (2). Data type (3) is related to (1) and (2), but refers to classes of information being considered for the first time; when trying a new variable in planning, it is not reasonable to expect the district to have the facts or projection techniques available to generate that data; thus, good type (3) data is based on intelligent estimates and speculations about a field of information for which data is not yet available. Type (3) data is testable, that is, over time data may be gathered to convert it into firmer factual knowledge of the (1) or (2) variety. At present, the district's data gathering activities are somewhat confusing and incomplete, but, by using testable assumptions in planning, and testing them as part of the planning process, it is probable that they will become type (1) or (2) data in a few years. Good examples of this form of data are performance levels on the district's Indicators, and such planning factor as "fringe benefit percentage," and"turnover rates for staff types." Soon the district will have the facts about these matters; in the meanwhile they are introduced into the planning procedures as testable assumptions.

Data type (4), untestable assumptions, is a different kind of information, representing values and preferences of the planners. The users, in other words, determine what is desirable or preferred in the district, rather than what _is_, and input these determinations in appropriate form in the planning process. The number of planning units in a program (beyond the minimum imposed by number of sites) is an untestable assumption or stipulation; similarly, many of the pro-rating procedures for assigning persons to planning units are also in this class. For this type of data, the good data are those determined through appropriate discussions with persons empowered to make the decisions, used reliably and consistently in planning, while the poor data are those determined arbitrarily, without discussion or deliberation, and applied capriciously.

At any time, in any governmental planning process, not all the data is as "good" as it should be, but this is no excuse for abandoning the planning effort; in fact the effort should be directed at planning with the best data available, and continually improving the base of facts, projections, and reasonable assumptions.

RESOURCE CLASSIFICATION SCHEMES

Program Structure

Because of the planning unit concept, the STEP program structure may be modified without extensive changes in planning procedures or software. The following charts show the currently proposed program structure, in three major components: Instructional Programs; Support Programs; Projects. Chart III.3 - 2 shows the organization of instructional programs, each of which is focused on a given student client group, rather than subject matters or specific instructional goals.

In the proposed STEP program structure, the cost center is a cluster of students, receiving a relatively uniform package of instructional services, usually in a given location. (Non-instructional programs are defined somewhat differently and will be discussed later). Thus, the objectives for a given program, or sub-program, are to effect changes in the clients of that program; the evaluation of the program, or sub-program, is concerned mainly with the degree of success in effecting the desired changes. The most important aspects of a program description are, first, a description of the students in the program, and, second, a description of that group's performance on the district's Indicators of Quality.

An analysis of district costs and effectiveness at the program level will prove quite instructive. The cost/student

CHART III.3-2 INSTRUCTIONAL PROGRAMS

Number	Name	Subprograms	Comment
I.1	Early Childhood	Each Site	Grades Pre-K to K.
I.2	Primary	Each Site	Grades 1-3.
I.3	Elementary	Each Site	Grades 4-6.
I.4	Intermediate	Each Site	Grades 7-8.
I.5	Secondary	Voc. 10, Voc. 11, Voc. 12. Non-voc 10, Non-voc. 11, Non-voc. 12.	Temporary pending organization of High School into smaller units.
I.6	Special	Each Site	A planning unit for each handicap group at each site.
I.7	Continuing	Basic, HSE, Misc. Community Ed.	All adults or drop-outs from the regualr system.

in each of these programs is different, as are the proportions of the district's total instructional expenditures in each program. Note, also, that even at this abstract level we can begin to see the expected output of each program; that is, the general objective for each of programs I.1-I.4 is to achieve a level of student competence that means he is ready or prepared for the next higher level. The objectives for I.5 - Secondary and I.7 - Continuing, relate to the kind of person who will enter the community as a result of public school services, especially with respect to his social and economic competence. Program I.6 - Special, of course, is harder to define, and will no doubt change frequently with the district's (or the State's) goals for education of the handicapped.

The level of detail in this instructional program structure, while it allows for immediate improvement of the district's cost analysis, can be carried even further to improve planning and management. For that reason, each of the instructional programs may be further divided into its sites or schools. Note, however, that this school-by-school division is intended to focus on clusters of students who are taught together, rather than on the school itself as a cost center.

This organization is not identical with the grade organization in all the schools. Most Elementary schools in the district consist of three sub-programs - an Early Childhood, Primary, and Elementary - and most Junior High Schools in the district consist of one sub-program - an Intermediate, but these divisions are not perfect. This organization is proposed because the goal of strategic cost-benefit analysis will be better served by treating students as cost centers, rather than buildings. (It will be possible, of course, to reassemble the program-budget accounts to correspond to schools, if that is what is required for some purposes.)

Another peculiarity is that the number of clients in each sub-program grows larger as the grades get higher. This imbalance is by design; the feeling among many TPS staff, and the general educational community, is that the consequences of early educational experiences are greater than those of later educational experiences. Thus, it is felt that much closer analysis and planning is required at the earlier levels - as a means to achieving goals at the higher levels. (Many academic failures at the secondary level are related to deficiencies that should have been overcome in primary grades.)

Unlike many educational program accounting systems, the STEP program analysis endeavors to allocate as much of the indirect and central office expenditures of the district to instructional programs as possible. Nevertheless, many of TPS' expenditures are committed to support activities, programs that enable the district to achieve its instructional goals and satisfy its legal obligations to Trenton, The State, and the U.S. Office of Education. It is difficult, in most cases, to specify the output of these supportive services, but is clear that when they are inadequately financed or operated, the district will be unable to meet its direct objectives and satisfy its legal requirements. The Support Program structure is shown in Chart III.3-3

Note that in several support programs, the word "central" underscores our intention to charge as many district expenditures as possible to instructional programs; those that remain, and cannot be realistically pro-rated, will be charged to support programs. (Thus, a custodial employee, permanently assigned to a given school, will be pro-rated across the instructional subprograms in that school, not charged to program II.12. Similarly, a principal who spends a tenth of his time on a central office curriculum development project will have a tenth of his costs charged to II.3.)

Planners have greater flexibility in determining the number of subprograms in the Support Programs; they may even treat an entire Support Program as a single planning unit (provided the site constraint is not violated).

In addition to programs and sub-programs, there are also "projects" (see earlier definition). A project is a fixed life cluster of activities, directed to a clear set of objectives, usually funded with a supplemental source of revenue. In STEP, a project must exist in one program, so that the term is not used synonymously with the term "project" in other TPS publications. In STEP, if a project cuts across several programs, it

Chart III.3-3

Support Programs

II.1 Executive-Policy Program (Superintendent and Board of Education

II.2 Central Public Information and Community Affairs

II.3 Central Curriculum Research and Development

II.4 Central Planning and Budget Development

II.5 Central Curriculum Supervision and Support

II.6 Central Pupil Personnel Services

II.7 Central Health-Dental-Child Study Services

II.8 Financial-Legal Services

II.9 Personnel-Payroll Services

II.10 Central Food Services

II.11 Central Transportation Services

II.12 Central Facilities-Maintenance-Operations

II.13 Central Capital Projects

must be treated as several projects. Thus, instead of Title I, STEP would have Title I - Early Childhood, Title I - Primary, Title I - Elementary, etc. For a description of existing TPS projects, see Project Directory, Division of Research, Planning, and Evaluation, Trenton Public Schools, Spring 1972.

Staff Types and Staff Variables

The resource requirements forecaster allows for any listing of 15 staff types, to define the staff resources in the district. (Expanding the list beyond 15 would require some program modifications.) Since more than 80% of the dollars spent in any school district are for salaries and employees benefits, this part of the cost/resource analysis is most important.

For the current implementation of the system, the staff-type list described in Chart III.3-4, is recommended.

Other staff-related variables, important in the system, are "fringe benefit percentage" and "turnover rate," for each staff type. The fringe benefit percentage is the relationship between the base salary and employer contributions to social security, pension, unions, health insurance, etc. Any dollar outlay mandated by contract, which is beyond the salary of the staff member, is included; this data does not now exist in TPS files, but should be entered as a testable assumption, until a more accurate analysis can be performed. Turnover rate refers to the percentage of members of a given staff type who, for any reason other than

Chart III.3-4

STAFF TYPES

01. Central Administration and Program Managers

02. Principals/Vice Principals

03. Administrative Staff (Professional/technical)

04. Teacher A - Early Childhood, Primary, Elementary

05. Teacher B - Intermediate, Secondary (non-voc.), Continuing

06. Teacher C - Vocational-technical

07. Teacher D - Special Ed.

08. Instructional Specialists (including, guidance, pupil personnel, library professionals, curriculm supervisors and specialists, etc.)

09. Health - doctors, nurses, psychologists, dentists, technicians, etc.

10. Transportation - non-administrative personnel

11. Food services - non-administrative personnel

12. Operations-Maintenance-Facilities - non-administrative personnel

13. Instructional aides and Support staff - non-administrative and paraprofessionals

14. Clerical-Office personnel

15. Miscellaneous (specify)

temporary leave or sabbatical, will not be working for the district the next year. Again, this data must now be entered as a testable assumption, pending further investigation. Users input a single value for these variables, to be used in all five years of the forecast.

A similar staff variable is "inflation" rate for each staff type. In STEP, staff inflation is the percentage incremental increase in salary, combining both raises and guaranteed annual increments. Again, it will be treated as an assumed variable until a more sophisticated analysis of historical data can be developed to produce a projection model.

Non-Staff Costs

The small proportion of resources not committed to salaries and benefits are Capital Outlay, all costs ordinarily associated with the 1200 series of the budget, and Non-staff/Non-C.O. costs -- all other resources. Caution must be taken to ensure that CO costs are not duplicated as Non-staff/Non-C.O. costs in other programs, particularly when debt service charges (the largest non-staff expenditure) are entered.

As with staff, the users are obliged to input a testable assumption about the inflation rates expected for Capital and other costs. If they do not wish to make such an assumption, they may input a direct estimation of the dollars committed to these categories, for each planning unit, in each of the five years of the planning period.

RESOURCE REQUIREMENT CALCULATIONS FOR PLANNING UNITS

a. Introduction

(1) Planning unit total costs for Y1-Y5 includes Y1-Y5 planning unit total staff costs, Y1-Y5 capital outlay, and Y1-Y5 planning unit total non-staff non-capital outlay costs. Each of these three cost variables can be determined by either one of two general methods: direct input of Y1-Y5 estimates or as calculated by the computer program using mathematical formula. The procedures for calculating Y1-Y5 planning unit costs are described below.

b. Cost Forecast Option Code

(1) The Resource Requirements Module has the capability of determining Y1-Y5 costs for the three cost categories in one of the three following ways:

(a) estimate and input costs directly

(b) adjust CY costs annually (Y1-Y5) by an inflation factor

(c) adjust CY costs annually by an inflation factor and a planning factor directly related to planning unit operations.

(2) Accordingly, the user must first, decide upon the Y1-Y5 cost calculation method best suited for each cost category in a particular planning unit,

and input his cost calculation preferences to the computer program. The latter task is accomplished by recording a Cost Forecast Option Code for each planning unit cost category, and then inputting the data.

(a) One of the following Cost Forecast Option Codes recorded in the forecast option code field of the appropriate form (CO Forecast Option - Block 5J, Form TSD-RRM-5905, NSNCO Forecast Option - Block 7F, Form TSD-RRM-5905, and Staff Forecast Option - Block 6F, Form TSD-RRM-5906) will upon input cause the desired cost calculation method to be used:

COST FORECAST OPTION CODE	EXPLANATION
01	User estimates Y1-Y5 costs (or number of positions) and CY and Y1-Y5 data is is input.
02	CY cost data only is input. Y1-Y5 cost data will be calculated taking into account inflation.
03	CY cost data only is input. Y1-Y5 cost data will be calculated taking into account inflation and a planning factor directly related to planning unit operations (e.g., expenditures per pupil).

C. Cost Calculations for Planning Units.

(1) Table III.3-a details the computational steps followed to calculate Y1-Y5 CO costs for a planning unit, Y1-Y5 NSNCO costs by cost type for a planning unit, and Y1-Y5 salary and staff costs by staff type for a planning unit based upon the cost forecast option code selected by the user.

(2) Once Y1-Y5 planning unit costs for each of the three cost categories are calculated, the following cost aggregations by planning unit can be performed:

(a). Y1-Y5 planning unit total NSNCO cost equals the summation of Y1-Y5 planning unit NSNCO costs across all NSNCO cost types for the planning unit.

(b). Y1-Y5 planning unit total staff cost equals the summation of Y1-Y5 staff costs by staff type across all staff types for the planning unit.

(c). Y1-Y5 planning unit current expense cost equals Y1-Y5 planning unit total NSNCO cost plus Y1-Y5 planning unit total staff cost.

(d). Y1-Y5 total planning unit cost equals Y1-Y5 planning unit current expense cost plus Y1-Y5 planning unit capital outlay.

(e). Y1-Y5 planning unit total local costs equal Y1-Y5 planning unit total cost minus Y1-Y5 planning unit non-current expense revenues.

d. Calculation Edit Checks

(1) The computer programs edits the values of cost variables used in the cost calculations. These edit checks are summarized below:

(a) Capital outlay and NSNCO costs (current year (CY) cost must be positive when the forecast option code is 2, and CY cost and CY enrollment must be both positive when the forecast option code is 3):

i. If the forecast option code is 2 and the CY cost is zero, Y1-Y5 costs are also zero.

ii. If the forecast option code is 3 and the CY cost is zero, Y1-Y5 costs are also zero.

iii. If the forecast option code is 3, and the CY cost is positive but the CY enrollment is zero, Y1-Y5 costs are calculated using the option 2 formula.

(b) Staff Costs (CY number of positions for a staff type must be positive when the forecast option code is 2, and CY number of positions for a staff type and CY enrollment must be both positive when the forecast option is 3):

i. If the forecast option code is 2 and the CY number is zero, then salary, fringe, and staff costs for a staff type for a planning unit are zero.

ii. If the forecast option code is 3 and the CY number of positions for a staff type and the CY enrollment are zero, then staff costs for a staff type for a planning unit are zero also.

d. Aggregate Cost Calculations: by Program, by Site, and by Project

(1) Y1-Y5 capital outlay costs, Y1-Y5 NSNCO costs, and Y1-Y5 staff costs for programs, sites, and projects are obtained by aggregating cost data accross the appropriate planning units by program code, site code and project code. Accordingly, the following general series of steps are performed:

(a). A planning unit is selected from the planning unit file for aggregating data by program, site, or project based upon the planning unit's program, site and project codes matching prespecified codes of the corresponding variable types.

(b). The cost data for the selected planning unit is extracted, and cost totals for each cost category for a program, or for a site, or for a project are aggregated.

TABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF NON-CAPITAL OUTLAY, AND STAFF COSTS

COST FORECAST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
01*	1. Estimate Y1-Y5 planning unit CO costs. 2. Record CY and Y1-Y5 CO costs in Block 5J, FORM TSD-RRM-5905. 3. Keypunch planning unit detail cards. Assemble card deck and input. 4. No cost calculation performed by computer program.	1. Estimate Y1-Y5 planning unit NSNCO costs by NSNCO cost type. 2. Record CY and Y1-Y5 NSNCO costs by cost type in Block 7F, FORM TSD-RRM-5905. 3. Keypunch planning unit detail cards. Assemble card deck and input. 4. No cost calculation performed by computer program.	1. Estimate Y1-Y5 number of positions by staff type. 2. Record CY and Y1-Y5 number of positions by staff type and CY salary by staff type in Block 6, FORM TSD-RRM-5906. 3. Keypunch planning unit detail cards. Assemble card deck and input. 4. Computer program then calculates salary and staff costs by planning unit, staff type, and year as detailed under Cost Forecast Option Code 03, Steps 1, 2, 3, 4a, 4b, 4d, and 4e.
02	1. Record CY planning unit CO costs in appropriate space in Block 5J, FORM TSD-RRM-5905. Also record zero for Y1-Y5 planning unit CO costs. 2. Keypunch planning unit detail cards. Assemble card deck and input.	1. Record CY planning unit NSNCO costs by NSNCO cost type in Block 7F, FORM TSD-RRM-5905. Also record zero for Y1-Y5 planning unit NSNCO costs by NSNCO cost type. 2. Keypunch planning unit detail cards. Assemble card deck and input.	1. Estimate Y1-Y5 number of positions by staff type. 2. Record CY and Y1-Y5 number of positions by staff type and CY salary by staff type in Block 6, FORM TSD-RRM-5906. 3. Keypunch planning unit detail cards. Assemble card deck and input. 4. Computer program then calculates salary and staff costs by planning unit, staff type, and year as detailed under Cost Forecast Option Code 03, Steps 1, 2, 3, 4a, 4b, 4d, and 4e.

TABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF NON-CAPITAL OUTLAY, AND STAFF COSTS

COST FORE-CAST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
	3. Computer program calculates Y1-Y5 CO costs by planning unit as follows: $CO_{pu,y} = CO_{pu,y}$ x $(1. + i)^{y}$ where, $CO_{pu,y}$ = Future year CO costs for planning unit PU in year Y. $CO_{pu,y-1}$= Previous years CO costs for planning unit PU. i = district-wide CO inflation rate. y = number of cost periods. Such that, Y1 Capital Outlay costs equal increased CO costs at the end of Y1 due to inflation plus the initial or CY CO costs. Y2 CO costs equal Y1 CO costs plus increased CO costs at the end of Y2 due to inflation, and so on.	3. Computer program calculates Y1-Y5 CO costs by planning unit as follows: $NSNCO_{pu,ct,y}=NSNCO_{pu,ct,y1}$ X$(1. + i_{ct})^{Y}$ where, $NSNCO_{pu,ct,y}$= Future year NSNCO costs for planning unit PU, NSNCO cost type CT, and year Y. $NSNCO_{pu,ct,y1}$= Previous year's NSNCO costs for planning unit PU and NSNCO cost type CT. i_{ct} = The district-wide NSNCO inflation rate for NSNCO cost type CT. y = Number of cost periods.	

ABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF, NON-CAPITAL OUTLAY, AND STAFF COSTS

OST FORE- AST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
03	1. Record CY planning unit CO costs in Block 5J, FROM TSD-RRM-5905. Also record zero for Y1-Y5 planning unit CO costs.	1. Record CY planning unit NSNCO costs by NSNCO cost type in Block 7F, FORM TSD-RRM-5905. Also record zeros for Y1-Y5 planning unit NSNCO costs by cost type.	1. Record CY planning unit number of positions by staff type and CY total salary by staff type on FORM TSD-RRM-5906. Also record zeros for Y1-Y5 planning unit number of positions by staff type.
	2. Record CY actual enrollment and Y1-Y5 enrollment estimates for the planning unit in Block 4A, FORM TSD-RRM-5905.	2. Record CY actual enrollment and Y1-Y5 enrollment estimates for the planning unit in Block 4A, FORM TSD-RRM-5905.	2. Record CY actual enrollment and Y1-Y5 enrollment estimates for the planning unit in Block 4A, FORM TSD-RRM-5905.
	3. Keypunch planning unit detail cards. Assemble card deck and input.	3. Keypunch planning unit detail cards. Assemble card and input.	3. Keypunch planning unit detail cards. Assemble card deck and input.
	4. Computer program calculates Y1-Y5 CO costs by planning unit in the following series of steps: a. Calculates the planning unit CO planning factor (CO expenditures/pupil): $COPF_{pu} = \frac{CO_{pu,y-1}}{E_{pu,y-1}}$ where, $COPF_{pu}$ = Capital outlay planning factor (PF) for planning unit PU.	4. Computer program calculates Y1-Y5 NSNCO costs by planning unit by NSNCO cost type in the following series of steps: a. Calculates the NSNCO planning factor (NSNCO expenditures/pupil) by planning unit by NSNCO cost type: $NSNCOPF_{pu,ct} = \frac{NSNCO_{pu,ct,y1}}{E_{pu,y-1}}$ where, NSNCOPF = NSNCO planning factor for planning unit PU and NSNCO cost type CT.	4. Computer program calculates Y1-Y5 Staff cost by planning unit by staff type in the following steps: a. Calculates a Staff to Student Ratio (SSR_{pu}) for the planning unit: $SSR_{pu} = \frac{E_{pu,y-1}}{NP_{pu,st,y-1}}$ where, $E_{pu,y-1}$ = Current year enrollment for planning unit PU.

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TABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF NON-CAPITAL OUTLAY, AND STAFF COSTS

COST FORECAST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
	$CO_{pu,y-1}$ = Current year CO cost for planning unit PU. $E_{pu,y-1}$ = Current year enrollment for planning unit PU. b. Calculates Y1-Y5 CO costs by planning unit ($CO_{pu,y}$) as follows: $CO_{pu,y} = CO_{pf,pu} \times E_{pu,y} \times (1 + i)^{y}$ Where, $E_{pu,y}$ = Enrollment for planning unit PU in year Y. i = The district-wide CO inflation rate. y = Number of cost periods.	$NSNCO_{pu,ct,y-1}$ = Current year NSNCO costs for planning unit PU and NSNCO cost type CT. $E_{pu,y-1}$ = Current year enrollment for planning unit PU. b. Calculates Y1-Y5 NSNCO costs for planning unit PU and cost type CT ($NSNCO_{pu,ct,y}$) as follows: $NSNCO_{pu,ct,y} = NSNCOPE_{pu,ct} \times E_{pu,y} \times (1 + i_{ct})$ Where, $E_{pu,y}$ = Enrollment for planning unit PU in year Y. i_{ct} = District-wide NSNCO inflation rate for NSNCO cost type CT. y = Number of cost periods.	$NP_{pu,st,y-1}$ = Number of positions of staff type ST in planning unit PU for the current year year. b. Calculates the current year mean salary by staff type by planning unit ($MS_{pu,st}$): $CYMS_{pu,st} = \frac{SC_{pu,st,y-1}}{NP_{pu,st,y-1}}$ Where, $SC_{pu,st,y-1}$ = Current year salary cost (excludes fringe benefits) for staff type ST in planning unit PU.

TABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF NON-CAPITAL OUTLAY, AND STAFF COSTS

COST FORE-CAST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
03			c. Calculates the Y1-Y5 number of positions for staff type ST and planning unit PU ($NP_{PU,ST,Y}$) as follows: $NP_{PU,ST,Y} = \frac{E_{PU,Y}}{SSR_{PU}}$ Where, $E_{PU,Y}$ = Enrollment for planning unit PU in year Y. SSR_{PU} = Staff to student ratio for planning unit PU. d. Calculates Y1-Y5 salary cost for staff type ST and planning unit PU ($SC_{PU,ST,Y}$) as follows: $SC_{PU,ST,Y} = NP_{PU,ST,Y} \times CYMS_{PU,ST,Y} \times (1. + i_{ST})$ Where, i_{ST} = District-wide salary cost inflation rate for staff type ST. Y = Number of cost periods.

TABLE III.3-a PROCEDURES FOR CALCULATING CAPITAL OUTLAY, NON-STAFF NON-CAPITAL OUTLAY, AND STAFF COSTS

COST FORECAST OPTION CODE	CAPITAL OUTLAY COST (CO)	NON-STAFF, NON-CAPITAL OUTLAY COST (NSNCO)	STAFF COST
			e. Calculates Y1-Y5 staff cost (includes fringe benefit costs) for staff type ST and planning unit PU ($SFC_{PU,ST,Y}$) as follows: $SFC_{PU,ST,Y} = SC_{PU,ST,Y} \times (1. + FB_{ST})$ Where, FB_{SY} = Fringe benefit percent for staff type ST.

USING THE RESOURCE REQUIREMENTS MODULE

a. Components of the Resource Requirements Module.

1. The Resource Requirements Module consists of four computer programs: the input data playback and planning unit cost model, the program cost model, the site cost model, and the project cost model.
   - (a) The input data playback prints formatted reports of all data input to the planning unit model.
   - (b) The planning unit model calculates Y1-Y5 costs by planning unit by cost type and prints a detail cost report for each planning unit.
   - (c) In each of the remaining models, planning unit cost data is aggregated by program, by site and by project and detail cost reports are produced by program, by site, and by project for a case (base case or alternative cases, as appropriate).

b. Milestones in Using the Computer Software.

The user is required to go through several stages of preparation and execution to use the Resource Requirements Module. These are discussed below.

1. Order of Tasks for Using the Resource Requirements Module
   - (a) The Resource Requirements Module must be run in the following two stages:

(1) TASK 1: PLAYBACK RUN AND PROCESSING - For the initial run of a case (either base case or alternative case) run only the input data playback for purposes of the review and the correction of data input.

(2) TASK 2: RUN COST MODELS - Subsequent to the input of final data corrections, run the cost models for the case.

(b) The steps to be followed in running the Resource Requirements Module are depicted in Chart III.3-5.

2. Order of steps for a computer run of the Resource Requirements Module

Table III.3-b lists the ordered sequence of job steps to be followed to run the Resource Requirements Module and the card deck to be used for each job. This same sequence of steps is followed for either a base case or an alternative case run. The steps listed in Table III.3-b were also presented graphically in Chart III. 3-5.

Each job step, including data requirements and JCL are discussed in the sections which follow.

CHART III.3-5 STEPS FOR RUNNING THE RESOURCE REQUIREMENTS MODULE

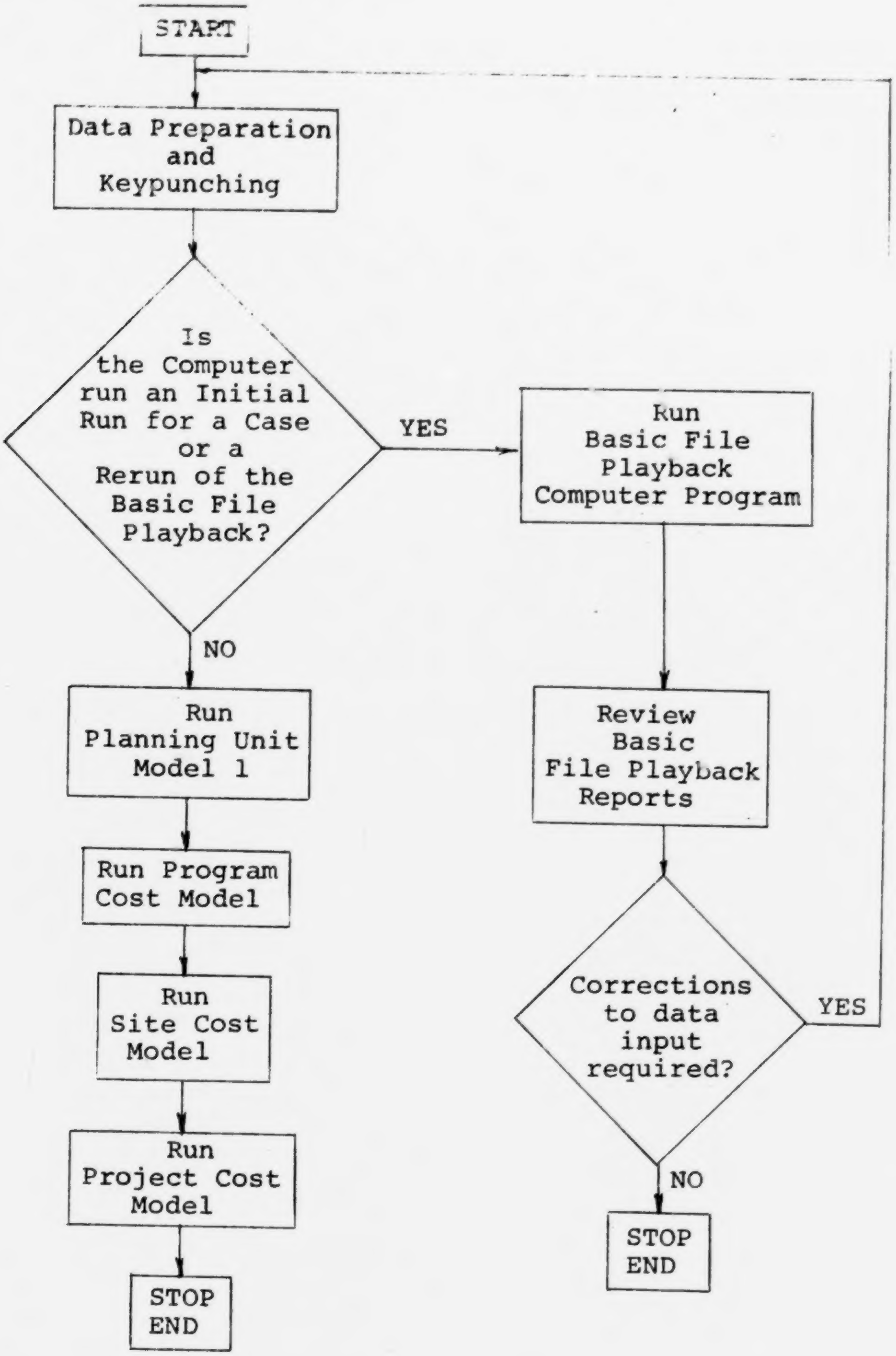
START
Data Preparation and Keypunching
Is the Computer run an Initial Run for a Case or a Rerun of the Basic File Playback?
YES
NO
Run Basic File Playback Computer Program
Review Basic File Playback Reports
Corrections to data input required?
YES
NO
STOP END
Run Planning Unit Model 1
Run Program Cost Model
Run Site Cost Model
Run Project Cost Model
STOP END

TABLE III.3-b Order for Running the Component Modules of the RESOURCES REQUIREMENTS MODULE

JOB NUMBER AND EXPLANATION	APPLICABLE CARD DECK
1 - Initial Basic File Playback for a case.	Planning Unit Model
2 - Rerun of Basic File Playback for a case, if required.	Planning Unit Model
3 - Generate planning unit cost reports for a case.	Planning Unit Model
4 - Generate program cost reports for a case.	Program Model
5 - Generate site/project cost reports for a case.	Site Model and Project Model

3. Basic File Playback

(a) Introduction

As described in Paragraph a above, a base case run, as well as an alternative case run produces detail costs reports by planning unit, by programs, and by site/project. In the instance of the alternative case run, a set of program, site, and project cost reports are produced for each alternative case specified by the user. (The alternative case planning unit data base contains information about all planning units which will be included in any of the alternative cases specified for a single computer run.)

However, prior to either a base case run or an alternative case run, the user must run a playback. The basic file playback is described below.

(b) What is the basic file playback?

The basic file playback is precisely what its name implies: it is a series of reports which contain a repetition of the most recent data input (data base) for planning purposes on file for the school district. Accordingly, a basic file playback is produced for base case input data and alternative cases input data. Each playback contains the permanent data and the planning unit data applicable to the particular run. The user has the option of obtaining a playback of both permanent and planning unit data, or only planning unit data. Table III.3-c lists the permanent data input and planning unit data input.

Table III.3-c Resource Requirements Module Data Input

Part A: Permanent Data

Site code and name for each planning unit site.

Staff Type code and name for each defined staff type.

Turnover rate for each staff type.

Salary inflation percent for each staff type.

Fringe benefit percent for each staff type.

Program code and name for each program in the program structure.

Capital outlay inflation rate for the district.

Non-staff and non-capital outlay cost code and name for each NSNCO cost type.

NSNCO cost inflation rate by NSNCO cost type.

Planning unit code and name for each planning unit in the base case, plus the planning unit code and name for each planning unit in the alternative case, if appropriate.

Part B: Planning Unit Data

For each base case or alternative case planning unit, as appropriate:

Planning unit code and name.

Reporting date - cutoff date of planning unit data.

Site code - site at which planning unit is located.

Program code - program to which planning unit belongs.

Project code - project of which planning unit is a part.

Status code - defines planning unit as subprogram, existing project, or project design.

Part B: Planning Unit Data (continued)

Capital outlay forecast option code - code to indicate how to calculate Y1-Y5 capital outlay for the planning unit

CY, Y1-Y5 Enrollment Base forecast

CY, Y1-Y5 Non-current expense revenues

CY capital outlay cost (also for Y1-Y5 CO if applicable)

Total number of non-staff non-capital outlay (NSNCO) cost types for which cost data is input

NSNCO forecast option code - code to indicate how to calculate Y1-Y5 NSNCO for the planning unit

CY NSNCO cost by NSNCO cost type (also for Y1-Y5 NSNCO if applicable)

Total number of staff types in the planning unit

Forecast option code by staff type - code to indicate how to calculate Y1-Y5 number of positions by staff type for the planning unit

CY total salary (without fringe benefits) by staff type

CY number of positions by staff type (also for Y1-Y5, number of positions, if applicable).

(c) Who will use the basic file playback?

The individual with responsibility for planning, will want to keep abreast of the basic data input for the basic case and for the alternative case, as will those persons responsible for maintaining the data base. In the latter case, the playback reports can be used to record corrections to input. Procedures for correcting basic data input will be described below.

Occasionally, even the superintendent or other decision making groups may want to see the data base, and therefore, utilize the playback. Ultimately however, anyone, even those outside of the planning function may want to use the playback at some point because of both the quantity and the quality of current assembled data which describes the various aspects the district's program.

(d) Description of Playback Reports

The basic file playback produces a report which displays data input card counts for the run, and several formatted reports of the actual data input. The latter report contains a formatted description of the data input, i.e., the input data is identified by descriptive headings. A separate report is provided for each permanent data input card type, i.e., there is a site title card report, a program title report, a project title report, and so on. A playback report is also provided for planning unit data input by planning unit. Exhibit III.3-i shows samples of the card count report and the data playback reports. (These reports are intended for illustrative purposes only.)

Exhibit III.3-i

Playback Reports

```
                 RESOURCE REUIREMENTS MODULE
   DATA INPUT CARD COUNTS FOR BASE CASE RUN-DATA AS OF 10/17/71


CARD IDENTIFIER                         CARD COUNT

   SITE                                        2

   STAFF TITLE                                 4

   PROGRAM                                     4

   PROJECT                                     3

   PLG UNIT TITLE                              4

   PLG UNIT DESCRIPTOR                         4

   TOTAL INPUT CARDS                          57
```

```
          DATA INPUT PLAYBACK: BASE CASE RUN-DATA AS OF 10/1/71

     PERMANENT DATA INPUT

  SITE TITLE CARDS

          CARD      CARD        SITE       SITE
         NUMBER  IDENTIFIER     CODE       NAME

            2       SCHL          14   ROBBINS SCHOOL

            2       SCHL          32   ANNEX 450 E. STATE STREET
----------------------------------------------------------------------------------
```

```
STAFF TITLE CARDS

        CARD       CARD       STAFF      STAFF
       NUMBER   IDENTIFIER    CODE       NAME

         3         MNPN          1   TEACHERS-EARLY CHILDHOOD

         3         MNPN          2   TEACHERS-PRIMARY

         3         MNPN          3   TEACHERS-ELEMENTARY

         3         MNPN          4   ADMINISTRATION-PRINCIPAL
-------------------------------------------------------------------
```

```
PROGRAM TITLE CARDS

         CARD       CARD      PROGRAM   PROGRAM
        NUMBER   IDENTIFIER    CODE       NAME

           4        PROG           6   EARLY CHILDHOOD

           4        PROG          67   ELEMENTARY

           4        PROG          63   PRIMARY

           4        PROG          71   SUPPORT SERVICES
------------------------------------------------------------------------
```

```
PROJECT TITLE CARDS

        CARD      CARD       PROJECT   PROJECT
        NUMBER  IDENTIFIER   CODE        NAME

          5        PRJC       2120    INNOVATIVE SCHOOL

          5        PRJC       2336    RIGHT TO READ EFFORT

          5        PRJC       1689    ESEA TITLE I


DISTRICT-WIDE CO INFLATION RATE CARD

        CARD      CARD       CAPITAL OUTLAY
        NUMBER  IDENTIFIER   INFLATION RATE

          6        DCOI         0.05


NON-STAFF NON-CO INFLATION
RATE BY NSNCO COST TYPE CARD

        CARD      CARD          NSNCO          NSNCO          NSNCO          NSNCO          NSNCO
        NUMBER  IDENTIFIER   COST TYPES     COST TYPE1     COST TYPE2     COST TYPE3     COST TYPE4

          7        DNSI          1              0.03           0.03           0.03           0.03
```

DISTRICT-WIDE STAFF DATA CARDS

CARD NUMBER	CARD IDENTIFIER	STAFF CODE	TURNOVER RATE	SALARY INFLA- TION PERCENT	FRINGE BENEFIT PERCENTAGE
8	DMRP	1	0.20	0.05	0.09
8	DMRP	2	0.15	0.07	0.09
8	DMRP	3	0.12	0.07	0.09
8	DMRP	4	0.02	0.04	0.09

PLANNING UNIT TITLE CARDS

CARD NUMBER	CARD IDENTIFIER	PLANNING UNIT CODE	PLANNING UNIT TITLE
9	PUID	1168	ROBBINS-EARLY CHILDHOOD PU
9	PUID	896	ROBBINS-PRIMARY PLG UNIT
9	PUID	5638	ROBBINS-ELEMENTARY PLG UNIT
9	PUID	4371	ANNEX-READING ACH ESEA TI

```
DATA INPUT PLAYBACK: BASE CASE RUN-DATA AS OF 10/1/71

CARD NO: 10   CARD TYPE: PUDS    DATE: 1071   NAME:ROBBINS-EARLY CHILDHOOD PRG UNIT   PU CODE: 1168

SITE CODE:   14        PROGRAM CODE:    3   PROJECT CODE:    0 STATUS CODE: SUBP   CC FORECAST OPTION CODE:  1

------------------------------------------------------------------------------------------------------------------------
                                                                              CY      Y1      Y2      Y3      Y4      Y5
CARD NO: 11   CARD TYPE: PENR     DATE: 1071   CODE:1168   ENROLLMENT :       99     107     111     114     116     122
CARD NO: 12   CARD TYPE: PNCE     DATE: 1071   CODE:1168   NCE REVENUE:        0       0       0       0       0       0
CARD NO: 13   CARD TYPE: PCCC     DATE: 1071   CODE:1168   CAPITAL OUT:     1000    1500    1500    1500    5000       0

------------------------------------------------------------------------------------------------------------------------
CARD NO: 14   CARD TYPE: PNSC     DATE: 1071   CODE:1168   NUMBER OF NSNCO COST TYPES:    1
CARD NO: 15   CARD TYPE: PNSC     DATE: 1071   CODE:1168
     NSNCC COST CODE       FORECAST OPTION CODE                                 CY      Y1      Y2      Y3      Y4      Y5

           1                        2                                         5000       0       0       0       0       0

------------------------------------------------------------------------------------------------------------------------
CARD NO: 16   CARD TYPE: PMNP     DATE: 1071   CODE:1168
     STAFF TYPES IN FC:  1   STAFF TYPE CODES:      1   0   0   0   0   0   0   0   0   0   0   0   0   0   0

CARD NO: 17   CARD TYPE: PUNP     DATE: 1071   CODE:1168
                                                                             NUMBER OF POSITIONS
     STAFF TYPE CODE       FORECAST OPTION CODE  CY SALARY                    CY      Y1      Y2      Y3      Y4      Y5
           1                        2              28000                     3.5     4.0     4.0     4.0     4.0     4.5
```

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(e) When and How to Produce a Playback

(1) Prior to running the Resource Requirement Module cost models for either a base case or alternative case run, obtain a playback of the input data for the respective cases as follows:

i. Table III.3-d provides the list of data cards for input to the basic file playback. Prepare the data cards in accordance with the instructions in the section on Card Purposes and Formats.

NOTE: For a base case, input data applicable to the base case. In the instance of an alternative case, input base case and alternative case permanent data, and only alternative case planning unit data.

ii. The PLAYBACK OPTION card controls the generation of the playback as follows:

(i) Enter the playback option code ALL in CC11-14 of the PLAYBACK OPTION card to produce a playback of all input data. Refer to the description of the PLAYBACK OPTION card in the section on Input Card Purposes and Formats for a complete discussion of that card and Table III.3-d for the overall order of the data input card deck.

(ii) Enter the run option code BLNK in CC16-19 of the PLAYBACK OPTION card, in which case only the playback is produced (the planning unit cost model is not run).

Table III.3-d List of Ordered Sequence of Data Input Cards for Basic File Playback

- RUN Card.
- PLAN TYPE Card.
- PLAYBACK OPTION Card.
- PERMANENT DATA HEADER Card.
- Set of SITE TITLE Cards (in any order).
- Set of STAFF TITLE Cards (in ascending STAFF TYPE Code order).
- Set of PROGRAM TITLE Cards (in any order)
- CAPITAL OUTLAY INFLATION RATE Card.
- DISTRICT NON-STAFF NON-CAPITAL OUTLAY INFLATION RATE Card.
- Set of DISTRICT-WIDE STAFF DATA Cards, (in same order as STAFF TITLE Cards).
- Set of PLANNING UNIT TITLE Cards (in any order).
- A set of cards to input data about a base case or or alternative case planning unit as follows (in same order as PLANNING UNIT TITLE Cards):
    - . PLANNING UNIT DESCRIPTOR Card
    - . PLANNING UNIT ENROLLMENT DATA Card
    - . PLANNING UNIT NON-CURRENT EXPENSE REVENUE DATA Card
    - . PLANNING UNIT CAPITAL OUTLAY Card
    - . PLANNING UNIT NSNCO INFORMATION Card
    - . Set of PLANNING UNIT NSNCO COST DATA Cards
    - . PLANNING UNIT STAFF INFORMATION Card
    - . Set of PLANNING UNIT STAFF TYPE DATA Cards.

- a set of cards to input data about the next planning unit in the case

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- a set of cards to input data about the last planning unit in the case

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(2) The JCL and overall order of the card deck for obtaining an initial playback for a base case run is listed in Exhibit III.3-ii.

   i. Data set FT01F001 is created and catalogued (saved). It is used to store all permanent and planning unit data input as 80 column card images.

   ii. Data set FT03F001 is created and catalogued. It is used to store the permanent data input as identifiable card types in specified formats.

   iii. Data set FT08F001 is created and catalogued. It is used to store identifiable planning unit records in specified format by planning unit.

   iv. The overall order of the data input cards is shown in Table III.3-d. Data input cards preparation and format are discussed below in the section of the same name.

   v. Exhibit III.3-ii(I) presents a list of the data deck input for a basic file playback.

Exhibit III.3-ii

JCL and Card Deck Order for Initial Playback for a Base Case

```
//PLAYB JOB etc.
// EXEC FORTGCG
//FT01F001 DD DSN=U.P8167.TPSDATAB,UNIT=2314,VOL=SER=XXXXXX,
//  DISP=(NEW,CATLG,DELETE),SPACE=(TRK,(50,2),RLSE),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=7280)
//FT03F001 DD DSN=U.P8167.TPERMDAT,UNIT=2314,VOL=SER=XXXXXX,
//  DISP=(NEW,CATLG,DELETE),SPACE=(TRK,(5,1),RLSE),
//  DCB=(RECFM=FB,LRECL=80),BLKSIZE=7280)
//FT08F001 DD DSN=U.P8167.TPDATA8,UNIT=2314,VOL=SER=XXXXXX,
//  DISP=(NEW,CATLG,DELETE),SPACE=(TRK,(45,2),RLSE),
//  DCB=(RECFM=VBS,LRECL=2052,BLKSIZE=7200)
//GO.SOURCE DD *
}
} PLANNING UNIT MODEL SOURCE DECK
}
/*
//GO.SYSIN DD *
} RUN TITLE Card
} PLAN TYPE Card
} PLAYBACK OPTION Card
} Balance of data input (See Table III.3-d)
/*
//
```

Exhibit III.3-ii(I)

List of Data Deck Input to Basic File Playback (Base Case)

```
  RUN    BASE CASE RUN-DATA AS OF 10/1/71
  CASE    BASE
  LIST    ALL  BLNK
01FHDRPERMANENT DATA INPUT
02SCHL0014ROBBINS SCHOOL
02SCHL0032ANNEX 436 E. STATE STREET
03MNPN0001TEACHERS-EARLY CHILDHOOD
03MNPN0002TEACHERS-PRIMARY
03MNPN0003TEACHERS-ELEMENTARY
03MNPN0004ADMINISTRATION-PRINCIPAL
04PROG0006EARLY CHILDHOOD
04PROG0087ELEMENTARY
04PROG0083PRIMARY
04PROG0071SUPPORT SERVICES
05PRJC2120INNOVATIVE SCHOOL
05PRJC2336RIGHT TO READ EFFORT
05PRJC1689ESEA TITLE I
06DEC1    .05
07DNSI01    .03   .03   .03   .03
08DMNP0001    .20    .05    .09
08DMNP0002    .15    .07    .09
08DMNP0003    .12    .07    .09
08DMNP0004    .02    .04    .09
09PU1D1168ROBBINS-EARLY CHILDHOOD PG
09PU1D0896ROBBINS-PRIMARY PLG UNIT
09PU1D5638ROBBINS-ELEMENTARY PLG UNIT
09PU1D4371ANNEX-READING ACH ESEA TI
10PULS1071ROBBINS-EARLY CHILDHOOD PLG UNIT11680014080000SUBP01
11PENR10711168       99      107      111      114      118      122
12PNCE10711168        0        0        0        0        0        0
13PUCO10711168     1000     1500     1500     1500     3000        0
14PNSD10711168   1
15PNSC1071116800001 2     5000        0        0        0        0        0
16PMNP1071116801 01
17PUNP107111680102    28000      3.5  4.0  4.0  4.0  4.0  4.5
10PULS1071ROBBINS-ELEMENTARY PLANNING UNIT08960014870000SUBP02
11PENR10710896      322      322      332      342      354      367
12PNCE10710896        0        0        0        0        0        0
13PUCO10710896     5000        0        0        0        0        0
14PNSD10710896   1
15PNSC1071089600001 3    10000        0        0        0        0        0
16PMNP1071089601 03
17PUNP107108960301    82400     10.3 10.3 10.3 11.1 11.4 11.6
10PULS1071ROBBINS-PRIMARY PLANNING UNIT   56380014830000SUBP02
11PENR10715638      289      300      310      320      330      340
12PNCE10715638        0        0        0        0        0        0
13PUCO10715638      500        0        0        0        0        0
14PNSD10715638   1
15PNSC1071563800001 1    15000    18000    20000    25000    30000    34000
16PMNP1071563801 03
17PUNP107156380203    76000      9.2
10PULS1071BD OF ED ANNEX-READING ACH-ESEA 43710032830000PROJ02
11PENR10714371      150      200      300      400      500      700
12PNCE10714371    50000    50000    50000    50000    50000    50000
13PUCO10714371      200        0        0        0        0        0
14PNSD10714371   1
15PNSC1071437100001 2     6000        0        0        0        0        0
16PMNP1071437102 02 04
17PUNP107143710203   120000     15.0
17PUNP107143710403    20000      1.0
```

(3) The data input and overall order of the card deck for obtaining an initial playback for an alternative case run is similar to that for the base case, however, the JCL is different, and the job is accomplished in two steps as follows:

a) Data sets FT01F001, FT03F001, and FT08F001 created by the base case run must be deleted as the first step in the job.

b) In step 2 of the job, the same data sets are created for the alternative case data input. Data Set FT03F001 contains permanent data applicable to both the base case and alternative case. Exhibit III.3-iii illustrates the JCL and card deck order for running a playback for an alternative case. Refer to Table III. 3-d for the list of data cards.

(f) Processing the Playback

(1) Review the Playback report against the corresponding input forms, checking for four types of errors: keypunch errors; data incorrectly transferred from the input form to the computer card; data on either the input form or computer card that was not entered correctly (not right or left justified as appropriate); and any omissions in data (valid correspondence between forecast option codes and the input of CY and Y1-Y5 cost data, etc.).

a) Place a check mark in the margin to identify cards to be punched, cross-out the incorrect value, and record corrections in red pencil on the playback report to the right of the erroneous value.

b) Submit playback reports for keypunching of the corrected cards.

c) Replace invalid cards in data deck with corrected cards.

(2) If the playback does not have to be rerun, skip Paragraph (g) and proceed to Paragrahp 3.

(g) Rerun of a playback

(1) A playback is rerun when there are errors in the preceding playback of input data. Therefore, the entire data deck with the corrected data cards must be input again. The JCL and overall order of the card deck for obtaining a rerun of a playback for either a base or alternative case is provided in Exhibit III.3-iii.

(2) In Step 1, Exhibit III.3-iii, the previously created data sets 1,3, and 8 are deleted. In Step 2, the same data sets are created (same as Exhibit III.3-ii).

NOTE: 1) In running any Resource Requirement Module job, care must be exercised in preparing and including JCL for new or old data sets, and killing data sets which were catalogued but are no longer required.

Exhibit III.3-iii

JCL and Card Deck Order for Rerun of Playback For a Base Case

```
//RBCPLAY JOB etc.
//STEP1 EXEC PGM=IEFBR14
KILL1 DD DSN=U.P8167.TPSDATAB,DISP=(OLD,DELETE)
KILL2 DD DSN=U.P8167.TPERMDAT,DISP=(OLD,DELETE)
KILL3 DD DSN=U.P8167.TPDATA8,DISP=(OLD,DELETE)
//STEP2 EXEC FORTGCG
//FT01F001
  .
  .
//FT03F001
  :
//FT08F001
  :
//GO.SOURCE DD *
}
}  PLANNING UNIT MODEL
}
/*
//GO.SYSIN DD *
}
}  Data Card Deck-includes corrected data cards
}
/*
//
```

*A standard card form, IBM electro 888157, is available for punching statements from this sheet.

(2) The JOB Card and JCL represented in this manual apply to the University of Pennsylvania Computer Center where these procedures were tested and debugged. The user is urged to refer to the IBM JCL Manual for a more detailed explanation of JCL and the specific card entries. In addition, the user should become familiar with the User Guide of the computer facility at which the module will be run so as to obtain the specific JOB card entries and JCL applicable to that facility.

3. Planning Unit Model Run

(a) For the Base Case

(1) Once all input data errors have been corrected and data sets (FT03F001 and FT08F001) with "scrubbed" input data have been catalogued planning unit model for the base case can be run.

(2) Run the planning unit model as the first job step in the multi-step job as follows:

i. Table III.3-e lists the data cards input to the planning unit model. Prepare the data cards in accordance with the instructions for these card types in the section on "Card Purposes and Formats. Exhibit III.3-iv illustrates data input to the planning unit model.

TABLE III.3-e Overall Order of Data Input to Planning Unit Model

RUN Card

PLAN TYPE Card

PLAYBACK OPTION Card

PERMANENT DATA COUNT Card

Exhibit III.3-iv

Data Input to Planning Unit Model

```
RUN    BASE CASE PROGRAM RUN-10/1/71
CASE     BASE
LIST     BLNK CURR
NUMB     2     4     4     3     4
```

ii. Prepare the PLAYBACK OPTION card, with the following entries:

   (i) Enter the playback option code BLNK in cc11-14 to preclude the printing of a playback.

   (ii) Enter the run option code GORR in cc16-19 to indicate that the planning unit model is to be run.

(3) Refer to Exhibit III.3-v for the JCL and input cards required to run the planning unit model for the base case.

   i. Data set FT02F001 is created and catalogued. It is used to store cost data by planning unit for the base case. (The results of the cost calculations performed by the planning unit model are written on FT02F001)

   ii. Notice that only four data cards are now required the RUN TITLE card, the PLAN TYPE INFORMATION card, the PLAYBACK OPTION Card, and the PERMANENT DATA COUNT Card - since the permanent data and the planning unit data are on data sets FT03F001 and FT08F001.

Exhibit III.3-v

JCL and Card Deck Order for Running Planning Unit Model for the Base Case

```
//PUMBC JØB etc.
// EXEC FØRTGCG
//FT03F001 DD DSN=U.P8167.TPERMDAT,DISP=(ØLD,KEEP)
//FT08F001 DD DSN=U.P8167.TPDATA2,DISP=(ØLD,KEEP)
//FT02F001 DD DSN=U.P8167.TPUEXP2,UNIT=2314,VØL=SER=XXXXXX,
// DISP=(NEW,CATLG,DELETE),SPACE=(TRK(45,2),RLSE),
// DCB=(RECFM=VBS,LRECL=2052,BLKSIZE=7200)
//GØ.SØURCE DD *
)
  PLANNING UNIT MODEL PROGRAM SOURCE DECK
)
/*
//GØ.SYSIN DD *
) Run Title Card
| Plan Type Information Card
| Playback Option Card
) Permanent Data Count Card
/*
//
```

(b) For the Alternative Case

(1) The procedures listed above in Paragraph 3(a)(1) to 3(a)(2) apply to an alternative case run also.

(2) Refer to Exhibit III.3-v for the JCL and overall order of the card deck with the following modifications:

(a) Change the job name on the job card to PUMAC.

(b) Remove the JCL cards for data set FT02F001, and replace with the following:

```
//FT04F001 DD DSN=U.P8167.TPUEXP4,UNIT=2314,
// VOL=SER=XXXXXX,DISP=(NEW,CATLG,DELETE),
// SPACE=TRK,(45,2),RLSE),DCB=(RECFM=VBS,
// LRECL=2052,BLKSIZE=7200)
```

(c) Data set FT04F001 is created and catalogued during an alternative case run of the planning unit model. This data set contains the alternative case planning unit data, including the results of the model's cost calculations.

4. Program and Site/Project Model Run

(a) For the Base Case

(1). The program, site, and project models can be run as a three step job. Exhibit III.3-vi presents the JCL and the overall Card deck order for running these models.

(b) For the Alternative Case

(1). Refer to Exhibit III.3-vi for the JCL and overall order of the card deck with the following modification:

i Change the step names on the EXEC cards to PROGA, SITEA, and PROJA respectively.

ii Add the following JCL card to each step immediately following the //FT03F001 card:

```
//FT04F001 DD DSN=U.P8167.TPUEXP4,
// DISP=(OLD,KEEP)
```

iii Copy the following set of cards in triplicate, and add to the data input cards in each step after the PLAN TYPE INFORMATION Card:

NUMBER OF ALTERNATIVE CASES Cards

Set of ALTERNATIVE CASE SPECIFICATION Cards.

Exhibit III.3-vi

JCL and Card Deck Order for Running Program,
Site, and Project Models.

```
//PRØGSJ JØB etc
//PRØGB EXEC FØRTGCG
//FT02F001 DD DSN=U.P8167.TPUEXP2,DISP=(ØLD,KEEP)
//FT03F001 DD DSN=U.P8167.TPERMDAT,DISP=(ØLD,KEEP)
//GØ.SØURCE DD *

  PRØGRAM MØDEL SOURCE DECK

/*
//GØ.SYSIN DD *
  Permanent Data Count Card
  Run Title Card
  Plan Type Information Card
/*

//SITEB EXEC FØRTGCG
//FT02F001 etc.
//FT03F001 etc.
//GØ.SØURCE DD *
  SITE MODEL SOURCE DECK
/*
//GØ.SYSIN DD *
  Permanent Data Count Card
  Run Title Card
  Plan Type Information Card
/*
//PRØJB EXEC FØRTGCG
//FT02F001 etc.
//FT03F001 etc
//GØ.SØURCE DD *
  PRØJECT MODEL SOURCE DECK
/*
//GØ.SYSIN DD *
  Permanent Data Count Card
  Run Title Card
  Plan Type Information Card
/*
//
```

5. Summary of Data Sets By Stage

(a) Table III.3-f provides a summary of the JCL required and the data sets by stage and case as a result of running the Resource Requirements Module.

(b) The data set definitions are summarized below:

(1) For a base case run

FT01F001 - base case input data stored as card images.

FT03F001 - base case permanent data input.

FT08F001 - base case planning unit data input without cost calculation results.

FT02F001 - base case planning unit data with the results of cost calculations for Y1-Y5 by cost type by planning unit.

(2) For an alternative Case run

FT01F001 - alternative case input data stored as card images.

FT03F001 - base case and alternative case permanent data input.

FT08F001 - alternative case planning unit data input without cost calculation results.

FT04F001 - alternative case planning unit data input with cost calculation results.

TABLE III.3-f JCL Requirements and Data Sets by Stage by Case for the Resource Requirements Module

STAGE	BASE CASE	ALTERNATIVE CASE
INITIAL PLAYBACK	JCL to Create FT01F001, FT03F001, and FT08F001.	STEP 1 - JCL to delete old FT01F001 FT03F001, and FT08F001 catalogued by a previous Base Case run STEP 2 - JCL to create new FT01F001, FT03F001, and FT08F001.
RERUN PLAYBACK	Step 1 - JCL to delete old FT01F001, FT03F001, and FT08F001. Step 2 - JCL to create new FT01F001, FT03F001, and FT08F001.	Same as Base Case
RUN PLANNING UNIT MODEL	JCL to Use Old FT03F001 and FT08F001 JCL to Create FT02F001	JCL to use old FT03F001 and FT08F001 JCL to Create FT04F001.
RUN PROGRAM, SITE, and PROJECT MODEL	JCL to Use Old FT03F001 and FT02F001.	JCL to Use Old FT02F001, FT03F001, and FT04F001.
SUMMARY DATA SETS AT COMPLETION OF ALL STAGES	FT01F001, FT02F001, FT03F001, and FT08F001 (all pertaining to base case data)	FT01F002, FT04F001, and FT08F001 pertaining to alternative case data, FT02F001 applicable to base case data, and FT03F001 applicable base case and alternative case permanent data.

C. INPUT CARD PURPOSES AND FORMATS

DATA PREPARATION PROCEDURES

a. Introduction

(1) The data deck for input to the basic file playback of the STEP Resource Requirements Module consists of a set of permanent data cards, a set of planning unit data cards, and various miscelleaneous data input. In addition, input to the cost models consist of various data sets created by the basic file playback and several data cards. Each input card is identified by a two character card type identifier. The purpose, format, and order of each card is described in this section.

b. Input Coding Forms: Use and Retention

(1) Record permanent and planning unit data on the following forms:

CARD TITLE	CARD TYPE IDENTIFIER	FORM NUMBER AND NAME	
Site Title Card	SCHL	TSD-RRM-5900	Site Title & Codes
Staff Title Card	MNPN	TSD-RRM-5901	Staff Titles & Codes
Program Title Card	PRØG	TSD-RRM-5902	Program Titles & Codes
Project Title Card	PRJC	TSD-RRM-5902A	Project Titles & Codes
District Capital Outlay Inflation Rate Card	DCØI	TSD-RRM-5903	CO,NS Inflation Rates & Staff District-Wide

District Non-Staff Non-Capital Outlay Inflation Rate Card	DNSI	TSD-RRM-5903	Same as Above
District Non-Staff Non-Capital Outlay Inflation Rate Card	DNSI	TSD-RRM-5903	Same as Above
District-Wide Staff Data Card	DMNP	TSD-RRM-5903	Same as Above
Planning Unit Title	PUID	TSD-RRM-5904	Planning Unit Titles & Codes
Planning Unit Detail Cards	Various	TSD-RRM-5905 TSD-RRM-5906	Planning Unit Form Planning Unit Staff Data Inpu Form
Case Specification Input Cards	Various	TSD-RRM-5907	Case Specifications Form

(2) Record all other data input for which forms have not been provided (the RUN Card, PLAYBACK OPTION Card, PLAN TYPE Card, and the PERMANENT DATA COUNT Card) on IBM General Purpose Card Punching Form, Form X20-8030-03 UM/025, or any standard IBM standard coding form, such as the FORTRAN Coding Form, Form GX28-7327-6U/M050.

(3) Keypunch the card input directly from the coded input forms. The card columns for the keypunching of data fields on the various card types are clearly shown on each form.

(4) The data input to and the overall order of the input data cards for the basic file playback is given in Table 111.3-d above, and in Table 111.3-e above for the

planning unit model. Paragraph 4 above in the section on "Using the Resource Requirements Module," describes the data input to the other cost models.

(5) Retain all coded input forms and data decks as follows:

(a) Set up a hard copy file for the retention of the coded input forms and all relative backup and reference materials. Keep the input forms separated by date and computer run identification.

(b) Clearly label data decks with the date and run identification title. Retain data decks for 1 year.

RUN Card

1. PURPOSE

(a) The RUN card labels the data deck. This identification allows easy retrieval of the appropriate data deck when several decks are stored.

The RUN card is mandatory for the basic file playback, and the cost models.

2. Preparation of the Data Card

(a) Prepare a RUN card in the following format:

CC1-2	Blank.
CC3-6	Card type identifier RUN.
CC7-8	Blank.
CC9-40	Identification of the data: base case or alternative plan name, planning year and date, run date, run identification number, etc.

PLAYBACK OPTION Card

1. PURPOSE

a. The PLAYBACK option card is used to input the playback option and run option selected by the user. Three playback options are available as follows: no playback, playback of only planning unit input data, or playback of all input data (planning unit and permanent input data).

b. The run option field indicates if the Planning Unit Cost Model is to be run.

c. The PLAYBACK option card is mandatory for the basic file playback and the planning unit model only.

2. Preparation of Data Card

a. Prepare a PLAYBACK option card in the following format.

CC 1-2	Blank.
CC 3-6	Card type identifier LIST.
CC 7-10	Blank.
CC 11-14	Enter one of the following PLAYBACK option codes: ALL - print playback of all input data. VAR - print playback of only planning unit data input

	BLNK - do not print playback.
CC 15	Blank.
CC 16-19	Enter one of the following codes: GORR - run the Planning Unit Cost and Report Model of the Resource Requirements Module. BLNK - do not run the Planni Unit Model.

PLAN TYPE Card

1. Purpose

(a) The PLAN TYPE card is used to input the plan type of the computer run, i.e., a base case or alternative case run. The type of plan then is used to determine the processing to be performed by the computer program. The PLAN TYPE card is mandatory for the basic file playback and the cost models.

2. Preparation of the Data Card

(a) Prepare a PLAN TYPE card completing Block 4c of Form TSD-RRM-5907,in the following format:

CC 1-2	Blank.
CC 3-6	Card type identifier CASE.
CC 7-10	Blank.
CC 11-14	Enter one of the following plan type identifiers: BASE - base case run ALTE - alternative case run

PERMANENT DATA INPUT HEADER CARD

1. PURPOSE

(a) The PERMANENT DATA INPUT HEADER Card is used to input a header to label the start of permanent data input.

The PERMANENT DATA INPUT HEADER Card is mandatory for the basic file playback only.

2. Preparation of the Data Card

(a) Prepare a PERMANENT DATA INPUT HEADER Card in the following format:

CC 1-2	Card type number 01.
CC 3-6	Card type identifier PHDR.
CC 7-26	PERMANENT DATA INPUT.

SITE TITLE Card

1. PURPOSE

   a. The SITE TITLE Card contains the name and numeric code of a site for a planning unit, and is used to input this data. The site title and site code is used to format output reports.

      One SITE TITLE Card is required for each site in the district. The set of site title cards is mandatory for the basic file playback. Spaces in the computer program is provided for a maximum of fifty sites. Input of more than fifty site cards without increasing the dimensions of the appropriate variables will generate an error message and halt processing.

2. Preparation of Data Card

   a. Prepare Form TSD-RRM-5900, SITE TITLES and CODES, entering the card type number, the card type identifier, site code, and site name in the blocks provided. Refer to Paragraph 3 below for the format of the SITE TITLE Card, and Exhibit III.3-vii for a sample of Form TSD-RRM-5900.

3. Card Format

CARD TYPE NUMBER 02	SITE TITLE Card
CC 1-2	CARD TYPE Number 02.
CC 3-6	CARD TYPE IDENTIFIER SITE.
CC 7-10	SITE Code.
CC 11-38	Name of the site.

Exhibit III.3-vii

TSD-RRM-5900

Resource Requirements Module
Site Titles and Codes
Input Form

1. Prepared by	2. Date	3. Run Title

Instructions. Complete one line for each site in the district, entering the card type, card type identifier, site code, and school name in columns 1,2,3, and 4, respectively. Prepare the set of school title cards in any order. Keypunch one school title card per line on the form as indicated by the card column notations at the top of each column.

1.	1 Card Type Number KPCC1-2	2 Card Type Identifier KPCC3-6	3 Site Code KPCC7-10	4 Site Name (KPCC 11-38) (Left-justify name, i.e., code title starting in CC11.)
2.	02 1 2	SITE 3 6	7 10	11 38
3.				
4.				
5.				
6.				
7.				
8.				
9.				

STAFF TITLE Card

1. PURPOSE

a. The STAFF TITLE card is used to input the alphanumeric name of a staff type and the numeric code of a staff type. The staff title and code is used to format output reports.

One STAFF TITLE card is required for each staff type for which district staff costs are calculated. A set of STAFF TITLE cards is mandatory for the basic file playback.

Space in the computer program is provided for a maximum of 15 staff types. Input of more than 15 staff title cards without revising the program will generate error messages and halt processing.

2. Preparation of Data Card

a. Prepare FORM TSD-RRM-5901 STAFF TITLES AND CODES, entering the card type number, the card type identifier, staff code and staff name in the blocks provided. Refer to Paragraph 3 below for the format of the STAFF TITLE card, and Exhibit III.3-viii for a sample of Form TSD-RRM-5901.

3. CARD FORMAT

CARD TYPE NUMBER 03 - STAFF TITLE Card

CC 1-2	CARD TYPE Number 03.
CC 3-6	CARD TYPE IDENTIFIER MNPN.
CC 7-10	Code of a staff type.
CC 11-38	Name of the staff type corresponding to the staff type code in CC 7-10.

Exhibit III.3-viii

Resource Requirements Module
Staff Titles and Codes

1. Prepared by	2. Date	3. Run Title

Instructions. Complete one line for each staff type, entering the card type number, the card type identifier, the staff code, and the corresponding staff name in columns 1,2,3, and 4, respectively. Keypunch directly from this form, preparing one Staff Title card per line as indicated by the card column notation at the top of each column.

1.	1 Card Type Number KPCC1-2	2 Card Type Identifier KPCC3-6	3 Staff Code KPCC7-10	4 Staff Name (KP CC 11-38) (Left-justify name, i.e., code title starting in CC11.)
2.	03 1 2	MNPN 3 6	7 10	11 38
3.				
4.				
5.				
6.				
7.				
8.				
9.				

PROGRAM TITLE Card

1. PURPOSE

a. The PROGRAM TITLE card is used to input the alphanumeric name of a program and the numeric code of the program. The program title and code is used to determine the program to which a planning unit belongs and to format output reports.

One PROGRAM TITLE card is required for each program in the program structure. A set of PROGRAM TITLE cards is mandatory for the basic file playback.

Space in the computer program is provided for a maximum of 20 program title cards. Input of more than 20 program title cards without increasing the dimensions of the appropriate variables will generate an error message and halt processing.

2. Preparation of Data Card

a. Prepare FORM TSD-RRM-5902 PROGRAM TITLES AND CODES, using one line per title, entering the card type number, the card type identifier, program code, and program title in the blocks provided. Refer to Exhibit III.3-ix for a sample of Form TSD-RRM-5902.

b. Refer to Paragraph 3 below for the format and coding of the PROGRAM TITLE card.

3. CARD FORMAT

CARD TYPE NUMBER 04 - PROGRAM TITLE Card

CC 1-2	CARD TYPE Number 04.
CC 3-6	CARD TYPE IDENTIFIER PRØG.
CC 7-10	Code of a program.
CC 11-38	Name of the program corresponding to the program code in CC 7-10.

Exhibit III.3-ix

Resource Requirements Module
Program Titles and Codes

TSD-RRM-5902

1. Prepared by	2. Date	3. Run Title

Instructions. Complete one line for each program in the program structure for which costs are to be calculated. Enter the card type number, the card type identifier, the program code, and the corresponding program name in columns 1,2,3, and 4, respectively. Keypunch directly from this form, preparing one Program Title card per line as prescribed by the card columns at the top of each column.

	1 Card Type Number KPCC1-2	2 Card Type Identifier KPCC3-6	3 Program Code KPCC7-10	4 Program Name (KP CC 11-38) (Left-justify name, i.e., code title starting in CC11.)
1.	0 4 1 2	P R 0 G 3 6	 7 10	 11 38
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

PROJECT TITLE Card

1. PURPOSE

a. The PROJECT TITLE card is used to input the alphanumeric name of a project and the numeric code of the project. The project title and code is used to determine the project, if any, to which a planning unit belongs.

One PROJECT TITLE card is required for each project in a case. A set of PROJECT TITLE cards is mandatory for the basic file playback.

Space in the computer program is provided for a maximum of 50 project title cards. Input of more than 50 title cards without increasing the dimensions of the appropriate variables will generate an error message and stop processing.

2. Preparation of Data Card

a. Prepare Form TSD-RRM-5902A, PROJECT TITLES and CODES, using one line per title, entering the card type number, the card type identifier, project code, and project title in the blocks provided. Refer to Exhibit III.3-x for a sample of Form TSD-RRM-5902A.

b. Refer to Paragraph 3 below for the format and coding of the PROJECT TITLE card.

c. CARD FORMAT

CARD TYPE NUMBER 05	PROJECT TITLE Card
CC 1-2	CARD TYPE Number 05.
CC 3-6	CARD TYPE IDENTIFIER PRJC.
CC 7-10	Code of a project.
CC 11-38	Name of the project corresponding to the program code in CC 7-10.

Exhibit III.3-X

Resource Requirements Module
Project Titles and Codes

TSD-RRM-5902A

1. Prepared by	2. Date	3. Run Title

Instructions. Complete one line for each project defined for the run. Enter the card type number, card type identifier, the project code and name in columns 1,2,3, and 4 respectively. Keypunch directly from this form, preparing one project title card as prescribed by the card column notation at the top of each column.

	1 Card Type Number KPCC1-2	2 Card Type Identifier KPCC3-6	3 Project Code KPCC7-10	4 Project Name (KP CC 11-38) (Left-justify name, i.e., code title starting in CC11.)
1.	05 1 2	PRJC 3 6	7 10	11 38
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

DISTRICT-WIDE DATA FOR NSNCO AND STAFF

1. Introduction

   a. FORM TSD-RRM-5903 is designed to enter the district-wide values for the Capital Outlay Inflation Rate (C0IR), Non-Staff Non-Capital Outlay Inflation Rate (NSNCIR) for each NSNCO cost type, and for each staff type - the Turnover Rate (TR), Salary Inflation Rate (SALIR), and Fringe Benefit Percent (FB). Each of the aforementioned data elements is input as separate card types and are discussed in order below. Refer to Exhibit 111.3-xi for a sample of FORM TSD-RRM-5903.

2. CAPITAL OUTLAY INFLATION RATE Card

   a. PURPOSE

      (1) The COIR card is used to input the current year inflation rate for capital outlay. The COIR is used to inflate CY planning unit CO costs to calculate Y1-Y5 CO by planning unit.

      One COIR card is mandatory for the basic file playback.

   b. Preparation of the Data Card

      a. Complete Blocks 1a,1b, and 1c of FORM TSD-RRM-5903, CO,NS INFLATION AND STAFF DATA DISTRICT-WIDE.

b. Enter the card type number, card type identifier, and the COIR as prescribed in the format and coding instructions in Paragraph 2c below.

c. CARD FORMAT

CARD TYPE NUMBER 06 - DISTRICT CAPITAL OUTLAY INFLATION RATE Card

CC1-2	CARD TYPE Number 06.
CC3-6	CARD TYPE IDENTIFIER DC0I.
CC7-12	Capital Outlay Inflation Rate as a decimal.

Exhibit III.3-xi Resource Requirements Module TSD-RRM-5903

CO,NS Inflation Rates and Staff Data, District Wide

Prepared by	Date	

Instructions. Enter the capital outlay inflation percent in Block IC. Enter non-staff non-CO inflation rate data in Blocks 2A through 2F. Enter district wide staff data by staff type in Blocks 3A to 3F. Complete on line of Section 3 for each staff type.

1. Capital Outlay (CO) Inflation Rate

A. Card Type Number	B. Card Type Iden.	C. CO Inflation Rate
06 1 2	DC0I 3 6	. 7 12

2. Non-Staff Non-Capital Outlay (NSNCO) Inflation Rate

A. Card Type Number	B. Card Type Iden.	C. Num. of NSNCO Rates	D. Rate 1	E. Rate 2	F. Rate 3	G. Rate 4
07 1 2	DNSI 3 6	7 8	. 9 14	. 15 20	. 21 26	. 27 32

3. Staff Data, District Wide by Staff Type

	A. Card Type Number	B. Card Type Iden.	C. Staff Code	D. Turnover Rate	E. Salary Inflation Rate	F. Fringe Benefit Rate
1.	08 1 2	DMNP	7 10	. 11 16	. 17 22	. 23 28
2.				.	.	.
3.				.	.	.
4.				.	.	.
5.				.	.	.
6.				.	.	.
7.				.	.	.
8.				.	.	.
9.				.	.	.
10.				.	.	.
11.				.	.	.
12.				.	.	.
13.				.	.	.
14.				.	.	.
15.				.	.	.

3. DISTRICT NON-STAFF NON-CAPITAL OUTLAY INFLATION RATE Card

a. PURPOSE

(1) The NON-STAFF NON-CAPITAL OUTLAY INFLATION RATE card is used to input the total number of NSNCO cost types defined in STEP, and the inflation rate for each NSNCO cost type. The NSNCO inflation rate by NSNCO cost type is used to inflate CY NSNCO costs by cost type to calculate the impact of inflation on Y1-Y5 NSNCO costs by cost type for each planning unit.

(2) One NON-STAFF NON-CAPITAL OUTLAY INFLATION RATE Card is mandatory for the basic file playback.

b. Preparation of the Data Card

(1) Complete Blocks 2a,2b,2c, and 2d (also 2e, 2f, and 2g, if applicable) of FORM TSD-RRM-5903 CO,NS INFLATION RATES AND STAFF DATA, DISTRICT-WIDE. The number of NSNCO inflation rate blocks completed (Blocks 2d to 2g) equals the total number of NSNCO cost types. However, at least Block 2d must be completed.

(2) Enter the card type number and identifier, and the NSNCO inflation rate as a decimal and as prescribed in the format and coding instructions in Paragraph 3c below.

c. CARD FORMAT

CARD TYPE 07 - DISTRICT NON-STAFF NON-CAPITAL OUTLAY INFLATION RATE

CC1-2	CARD TYPE Number 07.
CC3-6	CARD TYPE IDENTIFIER DNSI.
CC7-8	Total number of inflation rates by type of non-staff, non-capital outlay costs.
CC9-14	Inflation rate for non-staff, non-capital outlay cost type 1.
CC15-20	Inflation rate for non-staff, non-capital outlay cost type 2.
CC21-26	Inflation rate for non-staff, non-capital outlay cost type 3.
CC27-32	Inflation rate for non-staff, non-capital outlay cost type 4.

4. DISTRICT-WIDE STAFF DATA Card

a. PURPOSE

(1) The DISTRICT-WIDE STAFF DATA card is used to input the turnover rate, the salary inflation rate and the fringe benefit percent for each staff type for which planning unit salary and staff costs are calculated. The turnover rate by staff type is used to calculate the number of separations by staff type, district-wide. The salary inflation rate by staff type is used to inflate CY salary costs by staff type by planning unit. The fringe benefit percent by staff type is used to calculate the fringe benefit costs by staff type by planning unit. Total salary cost by staff type plus fringe benefit cost by staff type equals total staff cost by staff type.

(2) One DISTRICT-WIDE STAFF DATA card for each staff type is mandatory for the basic file playback.

b. Preparation of the Data Card

(1) Record data for one staff type per line, completing Blocks 3a,3b,3c,3d,3e, and 3f, of FORM TSD-RRM-5903 CONS INFLATION RATE AND STAFF DATA, DISTRICT-WIDE.

(2) Enter the card type number and identifier, the staff code, and the corresponding turnover rate, salary inflation rate, and fringe benefit rate as decimals and as prescribed in Paragraph 4c below.

c. CARD FORMAT

CARD TYPE NUMBER 08 - DISTRICT-WIDE STAFF DATA Card

CC1-2	CARD TYPE Number 08.
CC3-6	CARD TYPE IDENTIFIER DMNP.
CC7-10	Staff type code.
CC11-16	Turnover rate for the staff type in CC7-10.
CC17-22	Salary inflation rate for the staff type in CC7-10.
CC23-28	Fringe benefit rate for the staff type in CC7-10.

PLANNING UNIT TITLE Card

1. PURPOSE

a. The PLANNING UNIT TITLE card is used to input the code and name of each planning unit in the base case plus the planning units in the alternative case, if the computer run is an alternative case run. The set of PLANNING UNIT TITLE cards are arranged in the same order as the set of PLANNING UNIT DETAIL Cards are input.

b. One PLANNING UNIT TITLE card is required for each planning unit specified for a particular run.

c. A set of PLANNING UNIT TITLE cards is mandatory for the basic file playback.

d. Space in the computer program is provided for a maximum of 150 planning unit title cards. Input of more than 150 without increasing the dimensions of the appropriate variables will generate an error message and stop processing.

2. Preparation of the Data Card

a. Prepare FORM TSD-RRM-5904 PLANNING UNIT TITLES AND CODES, using one line per planning unit title, entering the card type number, card type identifier, planning unit code and name in columns 1,2,3, and 4, respectively. Refer to Exhibit III.3-xii for a sample of FORM TSD-RRM-5904.

b. Enter the planning unit information as prescribed in Paragraph 3 below.

3. CARD FORMAT

CARD TYPE NUMBER 09 - PLANNING UNIT TITLE Card

CC1-2	CARD TYPE Number 09.
CC3-6	CARD TYPE IDENTIFIER PUID.
CC7-10	A code of a planning unit.
CC11-38	Planning unit name corresponding to the planning unit code in CC7-10.

Exhibit III.3-xii

Resource Requirements Module
Planning Unit Titles and Codes

TSD-RRM-5904

1. Prepared by	2. Date	3. Run Title

Instructions. Complete one line for each planning unit defined for the run. Enter the card type number, card type identifier, the planning unit code and name in columns 1,2,3, and 4 respectively. Keypunch directly from this form preparing one Planning Unit Title Card per as prescribed by the card columns at the top of each column.

	1 Card Type Number KPCC1-2	2 Card Type Identifier KPCC3-6	3 Planning Unit Code KPCC7-10	4 Name of the Planning Unit (KP CC 11-38) (Left-justify name, i.e., code title starting in CC11.)
1.	0 9 1 2	P U I D 3 6	7 10	11 38
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

Planning Unit Detail Cards

1. Introduction

a. Detail planning unit data elements were previously listed in Part B of Table III.3-C. The planning unit data is input to the basic file playback via a series of eight card types. A basic set of planning unit detail cards contains at least eight cards (representing one card for each card type). However, a maximum number of 25 cards can be in set of planning unit detail cards if multiple numbers of two of the eight card types are required.

b. A set of planning unit detail cards consists of the following ordered card types:

Card Num.	Card Identifier	Explanation
10	PUDS	Planning unit descriptive characteristics 1 card.
11	PENR	Planning unit CY,Y1-Y5 enrollment one card
12	PNCE	Planning unit CY actual estimates of Non-Current Expense Revenues one card.
13	PUCO	Planning Unit Capital Outlay Costs for the CY for the CY (and Y1-Y5, if applicable) one card.
14	PNSD	Total Number of Non-Staff Non-Capital Outlay Cost Types to be input for the planning unit one card.

Card Num.	Card Identifier	Explanation
15	PNSC	Planning unit Non-Staff Non-Capital Outlay Cost for Cost Type 1 for the CY (and Y1-Y5, if applicable)· at least one card or as many as four, the maximum number of NSNCO cost types for which space is allocated.
16	PMNP	Total number of Staff types for which staff data will be input for the planning unit - one card.
17	PUNP	Staff Forecast Option Code, CY total salary, number of positions by staff type for the planning unit for the CY (and Y1-Y5 if applicable) - at least one card or as many as fifteen, the maximum number of staff types defined by the district

A basic set of planning unit detail cards as described above is required for every planning unit specified for a particular run in precisely the same order for a planning unit.

c. FORM TSC-RRM-5905 Planning Unit Data Form and FORM TSC-RRM-5906 Planning Unit Staff Data Form are to be used for completing the eight planning unit card types. Examples of each of these two forms are provided in Exhibit III.3-xiii and and Exhibit III.3-xiv, respectively.

d. The purpose and format of each planning unit detail card type is discussed below.

Resource Requirements Module
Planning Unit Data Form

1. Prepared by	2. Date	3. Run	4. Type Unit

escriptive Characteristics

B. Card Type Identifier PUDS 3 6	C. Date 7 10	D. Planning Unit Name 11 42	E. Planning Unit Code 43 46

F. Site Code 47 50	G. Program Code 51 52	H. Project Code 53 56	I. Status Code 57 60	J. CO Forecast Option 61 62

nrollment, Revenue, and CO Data - CY and Y1-Y5 (if appropriate).

d No.	C. Card Iden. (CT)	D. Date Mo. Yr.	E. PU Code	F. Years - CY, Y1-Y5 (if appropriate) (1)	(2)	(3)	(4)	(5)	(6)
2	3 6	7 10	11 14	15 22	23 30	31 38	39 46	47 54	55 62
1	PENR								
2	PNCE								
3	PUC0								

on-Staff Non-Capital Costs (NSNCO)

	D. Date Mo. Yr.	E. PU Code	F. No. or Cost Type Code	G. Option Code	H. Years - CY, Y1-Y5 (if appropriate) not required for Line 1 of Part 7 1 CY	2 Y1	3 Y2	4 Y3	5 Y4	6 Y5
6	7 10	11 14	15 18	19 20	21 28	29 36	37 44	45 52	53 60	61 68
SD										
SC										

Exhibit III.3-xiii

Resource Requirements Module
Planning Unit Data Form

	1. Prepared by	2. Date	3. Run	4. Type

5. Planning Unit Descriptive Characteristics

A. Card Type Number	B. Card Type Identifier	C. Date	D. Planning Unit Name	
10 1 2	PUDS 3 6	7 10	11 42	
	F. Site Code 47 50	G. Program Code 51 52	H. Project Code 53 56	I. Status Code 57 60	J.

6. Planning Unit Enrollment, Revenue, and CO Data - CY and Y1-Y5 (if appropriate).

A. Data Type	B. Card No. (CN)	C. Card Iden. (CT)	D. Date Mo. Yr.	E. PU Code	F. Years - CY, Y1-Y5 (if appropriate) (1)	(2)	(3)	(4)
Card Columns	1 2	3 6	7 10	11 14	15 22	23 30	31 38	39 46
I. Enroll	11	PENR						
II. NCEREV	12	PNCE						
III. CO	13	PUC0						

7. Planning Unit Non-Staff Non-Capital Costs (NSNCO)

A. NSNCO Cost Type	B.	C. CT	D. Date Mo. Yr.	E. PU Code	F. No. or Cost Type Code	G. Option Code	H. Years - CY, Y1-Y5 (if appropriate) not require 1 CY	2 Y1	3 Y2	4 Y3	5
Card Column	1 2	3 6	7 10	11 14	15 18	19 20	21 28	29 36	37 44	45 52	5
No. of NSNCO Cost Types	14	PNSD									
I.	15	PNSC									
II.	15										
III.	15										
IV.	15										

Resource Requirements Module
Planning Unit Staff Data Form

Prepared by	2. Date	3. Run	4. Type Unit

Comment

otals. Enter total number of staff types assigned to unit in block 5E. Enter staff type code for each
o unit in block 5F, starting in card column 17.

. Card Type Identifier	C. Date Mo. Yr.	D. PU Code	E. Number of Staff Types	F. Staff Type Codes (right-justify, e.g., Staff Type 1 is recorded as 01).
P M N P				
3 6	7 8 9 10	11 14	15 16	18 21 24 27 30 33 36 39 42 45 48 51 54 57 60

ata by staff type. Record one line of data for each staff type code entered in 5F. Enter total salary
k 6G. Enter CY number of positions for each staff type in block 6H1. If staff type forecast option
number of positions in blocks 6H2 to 6H6.

	C. Date Mo. Yr.	D. PU Code	E. Staff Code	F. Forecast Option	G. Total CY Salary	H. Number of staff positions by year 1 CY	2 Y1	3 Y2	4 Y3	5 Y4	6 Y5
P						.	.	.	.	.	.
6	7 10	11 14	15 16	17 18	19 26	30 34	35 39	40 44	45 49	50 54	55 59
						.	.	.	.	.	.
						.	.	.	.	.	.
						.	.	.	.	.	.
						.	.	.	.	.	.
						.	.	.	.	.	.
						.	.	.	.	.	.
						.	.	.	.	.	.
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Exh : III.3-xiv

Resource Requirements Module
Planning Unit Staff Data Form

	1. Prepared by	2. Date	3. Run	4. Type Unit
	Comment			

5. **Planning Unit Staff Total**. Enter total number of staff types assigned to unit in block 5E. Enter staff typ staff type assigned to unit in block 5F, starting in card column 17.

A. Card Type Number	B. Card Type Identifier	C. Date Mo. Yr.	D. PU Code	E. Number of Staff Types	F. Staff Type Codes (right-justify, is recorded as 01).
16	PMNP				
1 2	3 6	7 8 9 10	11 14	15 16	18 21 24 27 30 33 36 39 42

6. Planning Unit Staff data by staff type. Record one line of data for each staff type code entered in 5F. Ent by staff type in block 6G. Enter CY number of positions for each staff type in block 6H1. If staff type for equals 1, enter Y1-Y5 number of positions in blocks 6H2 to 6H6.

Staff Type Name	A. CT No.	B. CT Iden.	C. Date Mo. Yr.	D. PU Code	E. Staff Code	F. Forecast Option	G. Total CY Salary	H. Number of staff positions by yea 1 CY	2 Y1	3 Y2	4 Y3
	17	PUNP						.	.	.	.
1.	1 2	3 6	7 10	11 14	15 16	17 18	19 26	30 34	35 39	40 44	45 4
2.								.	.	.	.
3.								.	.	.	.
4.								.	.	.	.
5.								.	.	.	.
6.								.	.	.	.
7.								.	.	.	.
8.								.	.	.	.
9.								.	.	.	.
10.								.	.	.	.
11.								.	.	.	.
12.								.	.	.	.
13.								.	.	.	.
14.								.	.	.	.
15.								.	.	.	.

2. Planning Unit Descriptor Card

a. PURPOSE

(1) The Planning Unit Descriptor Card is used to input descriptive data which identify the planning unit. The data elements contained on the card are:

(a) Date - the reporting data for planning unit data. Enter the date in the form MM YY where MM = month and YY = year.

(b) Planning unit name - self explanatory.

(c) Planning unit code - code assigned to the planning unit.

(d) Site code - code of site where the planning unit is located. Refer to Table III.3-g for the current list of sites codes and names.

(e) Program code - the code of the program to which the planning unit belongs. Refer to Chart III.3-2 and Chart III.3-3 for the current list of program names.

(f) Project code - the project, if any, to which the planning unit belongs.

Table III.3-g SITE TITLES AND CODES, 1972

Code	Title
01	Administrations Bldg.
02	Annex
03	Cadwalader
04	Columbus
05	Cook
06	Franklin
07	Grant
08	Gregory
09	Harrison
10	Jefferson
11	Monument
12	Mott
13	Parker
14	Robbins
15	Stokes
16	Washington
17	Wilson
18	Jr. #1 Elem.
19	Jr. #2 Elem.
20	Jr. #3 Elem.
21	Jr. #5 Elem.
22	Jr. #1 Secondary
23	Jr. #2 Secondary
24	Jr. #3 Secondary
25	Jr. #4 Secondary
26	Jr. #5 Secondary
27	Central High School
28	Vocational Div. C.H.S.
29	Union Industrial Home
30	Donnelly Hosp. Mail
31	YWCA
32	436 E. State
33	Broad Sr. Bnk Bldg.
34	SUB Office
35	Betheny Presb.
36	Covenent Presb.
37	Prospect Presb.
38	Prospect St. Center
39	St. James Epis.
40	Wesley Meth.
41	Westminister Presb.
42	American Legion
43	Carver "Y" Center
44	E. Trenton Center
45	New Salem Center
46	Trenton Boys Club
47	ROTATING
48	NIXON SHOP
49	Mailed Out
50	Picked Up Here

(g) Status code - code which indicates status of a planning unit as follows: subprogram is SUBP existing project is PROJ, and project design is PJDE.

(h) Capital outlay forecast option code inputs the key which prescribes the method for determining capital outlay costs for the planning unit.

(2) The Site, Program, and Project Codes are used to extract specific planning unit data from the planning unit data sets for the inclusion in the Site, Program and Project Reports.

(3) The Planning Unit Descriptor Card is mandatory.

b. Preparation of the Data Card

(1) Complete Blocks 5A,5B,5C,5D,5E,5F,5G,5H,5I, and 5J of FORM TSD-RRM-5905, Planning Unit Data Form.

(2) Enter the card type number and identifier, and the other data elements as described in Paragraph 2C below.

c. CARD FORMAT

Card Type Number 10 Planning Unit Descriptor Card

CC 1-2	Card type number 10.
CC 3-6	Card type identifier PUDS.
CC 7-10	Reporting date or preparation date for data being entered. Enter month in CC 7-8 and last two digits of the year in CC 9-10.
CC 11-42	Planning unit name.
CC 43-46	Planning unit code.
CC 47-50	Site code for the planning unit cited in CC 43-46.
CC 51-52	Program code for the planning unit cited in CC 43-46
CC 53-56	Project code for the planning unit cited in CC 43-46.
CC 57-60	Status code for the planning unit cited in CC 43-46.
CC 61-62	Forecast option code for the capital outlay costs of the planning unit cited in CC 3-6 as follows: 01 = input CY and Y1-Y5 capital outlay costs. 02 = input CY capital outlay costs only 03 = input CY capital outlay costs only.

3. Planning Unit Enrollment Base Data Card

a. PURPOSE

(1) The Planning Unit Enrollment Data Card is used to input CY actual and Y1-Y5 forecasted enrollment for the planning unit.

(2) The Y1-Y5 enrollment estimates can be obtained from the STEP Enrollment Forecast Module Reports or estimated. The CY enrollment is used to calculate planning factors which are subsequently used to calculate Y1-Y5 cost estimates. Refer to the Resource Requirement Calculation section for a description of the cost estimate calculations.

(3) A Planning Unit Enrollment Data Card is mandatory.

b. Preparation of the Data Card

(1) Complete Blocks 6IB, 6IC, 6ID, 6IE, and 6IF (1) to 6IF (6) of FORM TSD-RRM 5905, Planning Unit Data Form, entering the data as described in Paragraph 3C below.

c. CARD FORMAT

CARD TYPE NUMBER 11	PLANNING UNIT ENROLLMENT BASE DATA Card
CC 1-2	Card type number 11.
CC 3-6	Card type identifier PENR.
CC 7-10	Reporting date for data being entered. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning unit code.
CC 15-22	CY enrollment for planning unit cited in CC 11-14.
CC 23-30	Y1 enrollment for planning unit cited in CC 11-14.
CC 31-38	Y2 enrollment for planning unit cited in CC 11-14
CC 39-46	Y3 enrollment for planning unit cited in CC 11-14.
CC 47-54	Y4 enrollment for planning unit cited in CC 11-14.
CC 55-62	Y5 enrollment for planning unit cited in CC 11-14.

4. Planning Unit Non-Current Expense Revenue Data Card

a. PURPOSE

(1) The Planning Unit Non-Current Expense Revenue Data Card is used to input the CY actual and Y1-Y5 estimate of non-current expense revenues from State and Federal sources anticipated by the planning unit. Total Y1-Y5 non-current expense revenue is obtained by summing Y1-Y5 revenue estimates across all planning units in the run. The Y1-Y5 non-current expense revenue total for the district is used as input to the revenue simulator.

(2) A Planning Unit Non-Current Expense Revenue Data card is mandatory.

b. Preparation of the Data Card

(1) Complete Blocks 6IIB, 6IIC, 6IID, 6IIE, and 6IIF (1) to 6IIF (6) of FORM BD-RRM 5905 Planning Unit Data Form, entering the data as described in Paragraph 4 below and as follows:

(a) Enter zero in the right most card column of Blocks 6IIF (1) to 6IIF (6), as appropriate if non-current expense revenues are not anticipated.

c. CARD FORMAT

Card Type Number 12	Non-current Expense Revenue Card
CC 1-2	Card type number 12.
CC 3-6	Card type identifier PNCE.
CC 7-10	Reporting date for data being entered. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10
CC 11-14	Planning unit code.
CC 15-22	CY non-current expense revenues.
CC 23-30	Y1 non-current expense revenues.
CC 31-38	Y2 non-current expense revenues.
CC 39-46	Y3 non-current expense revenues.
CC 47-54	Y4 non-current expense revenues.
CC 55-62	Y5 non-current expense revenues.

5. Planning Unit Capital Outlay Card

a. PURPOSE

(1) The PLANNING UNIT CAPITAL OUTLAY Card is used to input at least CY planning unit capital outlay costs, i.e., Capital Outlay Forecast Option equals 02 or 03 (refer to the PLANNING UNIT DESCRIPTOR Card, Block 5J). If the Capital Outlay Forecast Option equals 01, Y1-Y5 CO is estimated, coded and input directly.

(2) A PLANNING UNIT CAPITAL OUTLAY Card is mandatory.

b. Preparation of the Data Card

(1) Complete Blocks 6IIB, 6IIC, 6IIID, 6IIIE, and 6IIIF (1) to 6IIIF (6) of FORM TSD-RRM-5905, PLANNING UNITS DATA FORM, entering the data as described in Paragraph 5C below, and as follows:

(a) If the Capital Outlay Forecast Option Code is 02 or 03, enter the CY CO in Block 6IIIF (1) and zero in the right-most card columns of Blocks 6IIIF (2) to 6IIIF (6).

(b) If the Capital Outlay Forecast Option Code is 01, enter the CY CO and the CO estimates for Y1-Y5.

CARD TYPE NUMBER 13	CAPITAL OUTLAY COSTS Card
CC 1-2	Card type number 13.
CC 3-6	Card type identifier PUC0
CC 7-10	Reporting date for data being entered or date the data collection form is prepared. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning unit code.
CC 15-22	CY capital outlay for the planning unit cited in CC 11-14.
CC 23-30	Y1 capital outlay for the planning unit cited in CC 11-14.
CC 31-38	Y2 capital outlay for the planning unit cited in CC 11-14.
CC 39-46	Y3 capital outlay for the planning unit cited in CC 11-14.
CC 47-54	Y4 capital outlay for the planning unit cited in CC 11-14.
CC 55-62	Y5 capital outlay for the planning unit cited in CC 11-14.

6. Non-Staff Non-Capital Outlay Cost Data Input

a. Introduction

(1) Non-staff non-capital outlay costs (NSNCO) are input via a series of at least two cards, a NSNCO INFORMATION card and a NSNCO COST card for at least one NSNCO type. Sufficient space is provided on FORM TSD-RRM-5905, Part 7 for a total of four NSNCO cost types.

b. NSNCO COSTS INFORMATION Card

(1) PURPOSE

(a) The NSNCO COSTS INFORMATION Card is used to input the total number of NSNCO cost types for which data is to be input via the NSNCO cost card.

(b) The NSNCO COSTS INFORMATION Card is mandatory.

(2) Preparation of the Data Card

(a) Complete Blocks 7B, 7C, 7D, 7E, and 7F, of FORM TSD-RRM-5905, PLANNING UNIT DATA FORM, entering the data as described in Paragraph 6B (3) below.

(3) Card Format

CARD TYPE NUMBER 14 - NON-STAFF NON-CAPITAL OUTLAY COSTS INFORMATION Card

CC 1-2	Card type number 14.
CC 3-6	Card type identifier PNSD.
CC 7-10	Reporting date for data being entered or date the data collection form is prepared. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning unit code.
CC 15-18	Total number of non-staff non-capital cost types for which data will be input for the planning unit in CC 11-14.

c. NSNCO COST Card

(1) PURPOSE

(a) The PLANNING UNIT NSNCO COST Card is used to input both the NSNCO cost type forecast option code and the NSNCO cost data by NSNCO cost type for the planning unit. The number of NSNCO COST cards must equal the total number of NSNCO cost types entered in Block 71F of FORM TSD-RRM-5905.

(b) At least one NSNCO COST Card is mandatory.

(2) Preparation of the Data Card

(a) Complete Line 7I, and Lines 7II to 7IV, if appropriate, of Form TSD-RRM-5905, PLANNING UNIT DATA FORM, entering the data as described in Paragraph 6C (3) below and as follows:

1) If the forecast option code (CC 19-20) for the NSNCO cost type is 02 or 03, enter the CY NSNCO cost 7-H (1) on the appropriate cost type line, and zero in the right-most card column of Blocks 7-H (2) to 7-H (6).

2) If the forecast option code is 01, enter the CY NSNCO costs, and the Y1-Y5 estimate.

(3) Card Format

CARD TYPE NUMBER 15 - NON-STAFF NON-CAPITAL OUTLAY COST Card

CC 1-2	Card type number 15.
CC 3-6	Card type identifier PNSC.
CC 7-10	Reporting date for data being entered or date the data collection form is prepared. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning unit code.
CC 15-18	Non-staff non-capital outlay cost (NSNCO) type code for the NSNCO cost type for which cost data is being entered.
CC 19-20	Forecast option code for the NSNCO cost type cited in CC 15-17. 01 = input CY and Y1-Y5 NSNCO costs. 02 = input CY NSNCO cost only. 03 = input CY NSNCO cost only.
CC 21-28	CY NSNCO costs for the cost type cited in CC 15-17.
CC 29-36	Y1 NSNCO costs for the cost type cited in CC 15-17.
CC 37-44	Y2 NSNCO costs for the cost type cited in CC 15-17.
CC 45-52	Y3 NSNCO costs for the cost type cited in CC 15-17.
CC 53-60	Y4 NSNCO costs for the cost type cited in CC 15-17.
CC 61-68	Y5 NSNCO costs for the cost type cited in CC 15-17.

7. PLANNING UNIT STAFF DATA INPUT

a. Introduction

(1) Planning unit staff data are input via a series of at least two cards representing two card types, a PLANNING UNIT STAFF INFORMATION Card and a PLANNING UNIT STAFF TYPE DATA Card for at least one staff type. Space is provided on Form TSD-RRM-5906 PLANNING UNIT STAFF DATA FORM for up to a maximum of fifteen staff types.

b. PLANNING UNIT STAFF INFORMATION Card

(1) Purpose

(a) The STAFF INFORMATION Card is used to input the total number of staff types for which data is to be input via the PLANNING UNIT STAFF TYPE DATA Card.

(b) The PLANNING UNIT STAFF INFORMATION Card is mandatory.

(2) Preparation of the Data Card

(a) Complete Blocks 5A, 5B, 5C, 5D, 5E and 5F of Form TSD-RRM-5906, entering the data as described in Paragraph 7c(3) below.

(3) Card Format

CARD TYPE NUMBER 16 - PLANNING UNIT STAFF INFORMATION Card

CC 1-2	Card type number 16.
CC 3-6	Card type identifier PMNP.
CC 7-10	Reporting date for data being entered or date the data collection form is prepared. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning unit code.
CC 15-16	Total number of staff types in the planning unit cited in CC 11-14.
CC 17	Blank
CC 18-19	Staff type code of first staff type in unit.
CC 20	Blank
CC 21-22	Staff type code of second staff type in unit.
CC 23	Blank
CC 24-25	Staff type code of third staff type in unit.
CC 26	Blank
CC 27-28	Staff type code of fourth staff type in unit.
CC 29	Blank
CC 30-31	Staff type code of fifth staff type in unit.
CC 32	Blank
CC 33-34	Staff type code of sixth staff type in unit.

CC 35	Blank
CC 36-37	Staff type code of seventh staff type in unit.
CC 38	Blank
CC 39-40	Staff type code of eighth staff type in unit.
CC 41	Blank
CC 42-43	Staff type code of ninth staff type in unit.
CC 44	Blank
CC 45-46	Staff type code of tenth staff type in unit.
CC 47	Blank
CC 48-49	Staff type code of eleventh staff type in unit.
CC 50	Blank
CC 51-52	Staff type code of twelfth staff type in unit.
CC 53	Blank
CC 54-55	Staff type code of thirteenth staff type in unit.
CC 56	Blank
CC 57-58	Staff type code of fourteenth staff type in unit.
CC 59	Blank
CC 60-61	Staff type code of fifthteenth type in unit.

c. PLANNING UNIT STAFF TYPE DATA Card

(1) Purpose

(a) The PLANNING UNIT STAFF TYPE DATA Card is used to input the forecast option code, the CY total salary of a staff type, and the number of positions of a staff type. One card is required for each staff type in the planning unit, and the total number of PLANNING UNIT STAFF TYPE DATA Cards must equal the total number of planning unit staff types in the unit entered in Block 5E of Form TSD-RRM-5906.

(b) At least one PLANNING UNIT STAFF TYPE DATA Card is mandatory.

(2) Preparation of the Data Card

(a) Complete one line of Section 6, Form TSD-RRM-5906 for each staff type in the planning unit as described in Paragraph 7c(3) below and as follows:

1) If the forecast option code for the staff (Block 6F, Form TSD-RRM-5906) equals 01, enter the CY number of positions in Block 6H(1), and the Y1-Y5 estimated number of positions in Blocks 6H(2) to 6H(6) for the staff type.

2) If the forecast option code for the staff type equals 02 or 03, enter the CY number of positions in Block 6H(1), and zero in the right-most card column of blocks 6H(2) to 6H(6) for the cost type.

(3) Card Format

CARD TYPE NUMBER 17	PLANNING UNIT STAFF TYPE DATA Card
CC 1-2	Card type number 17.
CC 3-6	Card type identifier PUNP.
CC 7-10	Reporting date for data being entered or date the data collection form is prepared. Enter the month in numeric form in CC 7-8 and the last two digits of the year in CC 9-10.
CC 11-14	Planning Unit Code
CC 15-16	Staff type code for the staff type for which data is being entered. See chart III.3-4 for the staff codes.
CC 17-18	Forecast option code for the staff type cited in CC 15-16: 01 = input CY number of positions and Y1-Y5 estimate of number of positions. 02 = input CY number of positions only (enter zero for Y1-Y5). 03 = input CY number of positions only (enter zero for Y1-Y5).
CC 19-26	Total CY salary for the staff type cited in CC 15-16.
CC 27-29	Blank.
CC 30-34	CY number of positions for the staff type cited in CC 15-16.

CARD TYPE NUMBER 17	PLANNING UNIT STAFF TYPE DATA Card
CC 35-39	Y1 number of positions for the staff type cited in CC 15-16.
CC 40-44	Y2 number of positions for the staff type cited in CC 15-16.
CC 45-49	Y3 number of positions for the staff type cited in CC 15-16.
CC 50-54	Y4 number of positions for the staff type cited in CC 15-16.
CC 55-59	Y5 number of positions for the staff type cited in CC 15-16.

PERMANENT DATA COUNT Card

1. PURPOSE

   a. The PERMANENT DATA COUNT Card is used to input the number of site title cards, staff title cards, program title cards, project title cards, and planning unit title cards which were previously input to the basic file playback. These values are used in the computer programs as DO-parameters and are obtained from the report of permanent data counts produced by the basic file playback.

   b. This card is mandatory input for running the planning unit model (CC 16-19 of PLAYBACK OPTION Card equals GORR), program model, site model, and project model.

2. Preparation of the Data Card:

   a. Prepare a PERMANENT DATA COUNT Card in the following format:

CC 1-2	Blank.
CC 3-6	Card type identifier NUMB.
CC 7	Blank.
CC 8-11	Number of site cards in basic file playback.
CC 12	Blank.
CC 13-16	Number of staff title cards in basic file playback.

CC 17	Blank.
CC 18-21	Number of program title cards in basic file playback.
CC 22	Blank.
CC 23-26	Number of project title cards in basic playback.
CC 27	Blank.
CC 28-31	Number of planning unit title cards in basic file playback.

NUMBER OF ALTERNATIVE CASES Card

1. PURPOSE:

   a. This card is used to input the number of alternative cases which determines the number of cases for which to produce resource requirement reports (i.e., program, district summary, site, and project reports).

   This card is not required for a base case run. However, it is a mandatory card for an alternative case run (the case option identifier on the CASE card equals ALTE) of the program, site, and project models.

2. Preparation of the Data Card:

   a. Complete Blocks 5A, 5B, and 5C of Form TSD-RRM-5907, CASE SPECIFICATIONS, as prescribed in Paragraph 3 below (see Exhibit III.3-xv):

3. Card Format:

CARD TYPE NUMBER 18	NUMBER OF ALTERNATIVE CASES Card
CC 1-2	Card type number 18.
CC 3-6	Card type identifier NALT.
CC 7	Blank.
CC 8-9	Number of alternative cases to be run.

ALTERNATIVE CASE SPECIFICATION Card

1. PURPOSE:

   a. The ALTERNATIVE CASE SPECIFICATION Card is used to input the codes of proposed projects to be combined with the base case data to form an alternative case.

   b. The ALTERNATIVE CASE SPECIFICATION Card is mandatory for an alternative case run of the program, site, and program models (i.e., the case option identifier on the CASE equals ALTE). An ALTERNATIVE CASE SPECIFICATION card is required for each alternative case to be forecasted in a single computer run (as many cards as are required can be used to describe a case).

2. Preparation of the Data Card

   a. Complete as many lines of Part 6, Form TSD-RRM-5907, as required for any single alternative plan specification, repeating CC 1-33 and starting with the tenth project in CC 35-38 of the next line. (See Exhibit III.3-xv for an example of Form TSD-RRM-5907.)

      1) If the case option code equals FULL, complete CC 1-33 only (do not complete the balance of the line).

2) Enter BLNK in the field after the last field in which a four digit project code was entered.

3. CARD FORMAT

CARD TYPE NUMBER 19 ALTERNATIVE CASE SPECIFICATION Card

CC 1-2	Card type number 19.
CC 3-6	Card type identifier PLAN.
CC 7-8	Numeric code of the alternative plan.
CC 9-28	Title of the alternative plan.
CC 29	Blank.
CC 30-33	FULL - use all projects in the alternative plan.
CC 34	Blank.
CC 35-38	Code of the first project in the alternative plan.
CC 39	Blank.
CC 40-43	Code of the second project in the alternative plan.
CC 44	Blank.
CC 45-48	Code of the third project in the alternative plan.
CC 49	Blank.
CC 50-53	Code of the fourth project in the alternative plan.
CC 54	Blank.

CC 55-58	Code of fifth project in the alternative plan.
CC 59	Blank.
CC 60-63	Code of sixth project in the alternative plan.
CC 64	Blank.
CC 65-68	Code of the seventh project in the alternative plan.
CC 69	Blank.
CC 70-73	Code of the eighth project in the alternative plan.
CC 74	Blank.
CC 75-78	Code of the ninth project in the alternative plan.

If more than five project codes are to be input, duplicate CC 1-34 and begin with the tenth project in CC 35-38.

Resource Requirements Module
Case Specifications

epared by	2. Date	3. Run Iden.

Instructions. For a base case run, complete Block 4 only. For an alternative case run, complete Blocks 4, 5, and 6. The Alternative Case Specification Card indicates the projects in an alternative case. When all projects are to be included in an alternative case, complete Blocks 6A through 6E, and enter the option code FULL in CC 30-33. The balance of the card remains blank. When only specific projects are in an alternative case, complete Blocks 6A through 6E, enter the option code INPJ in CC 30-33, and enter the project codes in the case in P1 through P9 of Block 6G. If more than nine projects are in a case, repeat CC 1-33 on the next line and enter the tenth project in CC 35-38, Block G, P1. After the last project in the case is recorded, enter BLNK in the next field.

lan Type Card

B. Card Type Identifier	C. Case Option Identifier
C A S E 3 6	7 11 14

rnative Cases Card

B. Card Type Identifier	C. Number of Alternative Cases
N A L T 3 6	8 9

ase Specification Card

C. Card Type	D. Case Code	E. Case Title	F. Option Code	G. Codes of Projects in Alternative Plan (right-justify, e.g., project code 32 is recorded as 0032). P1	P2	P3	P4	P5	P6	P7	P8	P9
P L A N 3 6	7 8	9 28	30 33	35 38	40 43	45 48	50 53	55 58	60 63	65 68	70 73	75 78

Exhibit III.3-XV

Resource Requirements Module
Case Specifications

	1. Prepared by	2. Date	3. Run Iden.

4. Computer Run Plan Type Card

A. Card Type Number	B. Card Type Identifier	C. Case Option Identifier
1 2	CASE 3 6	7 11 14

5. Number of Alternative Cases Card

A. Card Type Number	B. Card Type Identifier	C. Number of Alternative Cases
18 1 2	NALT 3 6	8 9

Instructions. For a base case run, complete B
alternative case run, complete Blocks 4, 5, an
Case Specification Card indicates the projects
case. When all projects are to be included in
complete Blocks 6A through 6E, and enter the o
CC 30-33. The balance of the card remains bla
fic projects are in an alternative case, compl
6E, enter the option code INPJ in CC 30-33, an
codes in the case in Pl through P9 of Block 6G.
projects are in a case, repeat CC 1-33 on the n
the tenth project in CC 35-38, Block G, Pl. A
in the case is recorded, enter BLNK in the nex

6. Alternative Case Specification Card

A. Case No.	B. Card Type Number	C. Card Type	D. Case Code	E. Case Title	F. Option Code	G. Codes of Projects in Alternative Pl e.g., project code 32 is recorded a P1	P2	P3	P4	P5	P6
1.	19 1 2	PLAN 3 6	7 8	9 28	30 33	35 38	40 43	45 48	50 53	55 58	60
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											

SOFTWARE DOCUMENTATION FOR
THE RESOURCE REQUIREMENTS MODULE.

Documentation for the Resource Requirements Module is provided in this section. The documentation is presented in the following order:

a. A commented listing of the basic file playback and planning unit model computer program, and a flowchart of the main routine of the model.

b. Same as in Paragraph b for the Program Cost Model.

c. Commentary on adapting the Program Cost Model for producing site and project reports.

d. Variable dictionary applicable to all the computer programs in the module.

e. Description of output reports.

COMMENTED LISTING OF THE BASIC FILE PLAY BACK AND PLANNING UNIT MODEL COMPUTER PROGRAM

A commented listing of the Basic File Playback and Planning Unit Model is shown on the following pages. The program is written in FORTRAN IV G-level. The main routine and its subroutines appear as follows:

PROGRAM OR SUBROUTINE	EXPLANATION	Page
MAIN	Controls running of Basic File Playback and Planning Unit Model.	001-003
CDFIND	Identifies card types, reads cards in appropriate format, and writes permanent data on Data Set 3 and planning unit data on data set 2 or 4.	004-008
PLBACK	Prints formatted playback reports.	009-013
PERDAT	Reads permanent data card counts and permanent data from data set 3 into core.	014
TITLE	Prints title page.	015
PUREAD	Reads a planning unit record from data set 8.	016
PURITE	Writes a planning unit record on data set 8.	017
CPLOST	Calculates Y1-Y5 costs by cost type for a planning unit.	018-022

PRTPU	Prints planning unit detail reports.	023-024
SIFIND	Searches site title array for a site code which matches the planning unit record site code.	025
PRFIND	Searches program title array for a program code which matches the planning unit record program code.	026
DIMERR	Prints even message when a particular variable exceeds present storage.	027

```
FORTRAN IV G LEVEL  20                MAIN              DATE = 72168         12/54/24              PAGE 0001
                    C
                    C
                    C          RESOURCE REQUIREMENTS MODULE
                    C
                    C
                    C STEP1.  PLANNING UNIT COST MODEL AND REPORT GENERATION PROGRAM.
                    C         CALCULATES Y1-Y5 PLANNING UNIT COSTS BY COST TYPE.
                    C         CREATES PLANNING UNIT DATA SET CONTAINING CY
                    C         AND Y1-Y5 COSTS BY COST TYPE BY PLANNING UNIT.
                    C         PRINTS PLANNING UNIT DETAIL REPORTS.
                    C         SUBMIT BASE CASE PLANNING UNITS ON INITIAL RUN.
                    C         SUBMIT ALTERNATIVE CASE PLANNING UNITS ON SUBSEQUENT RUN.
                    C
                    C
                    C DECLARATION STATEMENTS
                    C
 0001                     REAL*8 CARD(10)
 0002                     REAL NSINF(4)
 0003                     INTEGER C
 0004                     INTEGER B,CN,CI,T1(10),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
                         1PCTITL(150,8),PLN(8),PUC,PCS,PUPR,PUPJ,PUST,PCOF,T3(5),OT,PUCHK,
                         2RTITLE(6)
 0005                     INTEGER BLNK/'BLNK'/,PROR/'PROR'/,ALTE/'ALTE'/,
                         1ALL/'ALL'/,VAR/'VAR'/,BASE/'BASE'/,GUAR/'GUAR'/
 0006                     INTEGER CCN,CCI,CCT,CPUC
 0007                     COMMON ISICST(17,5,8),NPPCR(17),PNP(17,8),NSINF,I1,I2,I3,B,CN,CI,
                         1T1,T2,STITLE,MATITL(15,8),PTITLE,PJTITL,COUNPR,NNSINF,MNC(15),
                         2CPNPR(15,5),PCTITL,PCN,PCC,PCS,PCPR,PCPJ,PUST,PCOF,IPENR(8),
                         3NCERV(8),ICC(8),NNSCC,INCRR(8),NPRTYP,IWORK1(15),NSITEC,NSTACO,
                         4NPRJCO,NPROCC,NUMNPC,NPU,CYCLPP,CYNSPP,SSR(15),CYMS(15),T3,OT,
                         5RTITLE,IPC,IRERNG,NSC(5,7),OCN,OCI,OOT,OPUC,N,NPUOS
                    C
                    C
                    C
 0008                     IRERNG=1999
 0009                     IPU=0
 0010                     N=0
                    C
                    C INPUT RUN TITLE CARD.
                    C
 0011                     READ(5,20) (RTITLE(I),I=1,6)
 0012                  20 FORMAT(2X,6A4)
                    C
                    C INPUT PLAN TYPE INFORMATION CARD.
                    C
 0013                     READ(5,22) ICT,I1
 0014                  22 FORMAT(2X,A4,4X,A4)
                    C
                    C INPUT PLAYBACK OPTION CARD.
                    C I2 IS THE PLAYBACK CONTROL FIELD
                    C I3 IS THE RUN CONTROL FIELD FOR THE PLANNING UNIT MODEL
                    C
 0015                     READ(5,26) I2,I3
 0016                  26 FORMAT(10X,A4,1X,A4)
                    C
                    C SET TEMPORARY DATA SET DESIGNATION B EQUAL TO 8.
                    C
 0017                     B=8
                    C
                    C TEST I2 TO DETERMINE IF PLAYBACK OPTION IS TO BE EXERCISED
                    C
```

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```
 0018                IF(I2.EQ.BLANK)GO TO 200
               C
               C INPUT ALL DATA CARDS AND WRITE ON DATA SET 1.
               C
 0019             35 READ(5,30,END=40) CARD
 0020             30 FORMAT(10A8)
 0021                N=N+1
 0022                WRITE(1,30) CARD
 0023                WRITE(6,1) CARD
 0024              1 FORMAT('0',10A8)
 0025                GO TO 35
               C
 0026             40 REWIND 1
               C
               C INITIALIZE STAFF COST ARRAY, NUMBER OF
               C POSITIONS ARRAY, COST FORECAST OPTION
               C ARRAY, AND ASSOC INFLATION RATE ARRAY.
               C
 0027                DO 48 I=1,17
 0028                DO 46 J=1,3
 0029                DO 44 K=1,6
 0030                ISTCST(I,J,K)=0
 0031             44 CONTINUE
 0032             46 CONTINUE
 0033             48 CONTINUE
 0034                DO 42 I=1,17
 0035                NPOSN(I)=0
 0036             42 CONTINUE
 0037                DO 50 I=1,17
 0038                DO 50 J=1,6
 0039                PRP(I,J)=0.0
 0040             50 CONTINUE
 0041                DO 71 I=1,5
 0042                DO 73 K=1,7
 0043                ASC(I,K)=0
 0044             73 CONTINUE
 0045             71 CONTINUE
               C
               C INITIALIZE OTHER VARIABLES.
               C
 0046                LCN=0
 0047                LCI=0
 0048                LCT=0
 0049                LPOC=0
 0050                DO 89 I=1,6
 0051                ASINF(I)=0
 0052             89 CONTINUE
               C
               C
               C IDENTIFY CARD TYPES ON DATA SET 1
               C AND WRITE RECORD ON DATA SET 3 OR 6.
               C
               C
 0053                CALL CDRING
 0054                REWIND 3
 0055                REWIND 6
               C
               C
 0056                CALL TITLE
               C
               C
```

```
0057            CALL PLREAD
          C
          C TEST IS TO DETERMINE IF PLANNING UNIT COST
          C PHASE OF THE RUN IS TO BE RUN.
          C
0058        600 IF(IS.NE.ICON) GO TO 1000
0059            REWIND 3
0060            CALL PERCAT
0061            REWIND 8
0062            CALL TITLE
          C
          C SET DATA SET C DESIGNATION EQUAL
          C TO 4 IF RUN IS FOR ALTERNATIVE CASE PLANNING UNITS.
          C
0063            C=4
          C
          C SET DATA SET C DESIGNATION EQUAL TO 2 IF RUN IS
          C FOR BASE CASE PLANNING UNITS.
          C
0064            IF(III.EQ.BASE)IC=2
0065            DO 100 LL=1,NPU
          C
          C
0066            CALL PUREAD
          C
          C
0067            CALL CPCOST
          C
          C
0068            CALL WRIPU
          C
          C WRITE PLANNING UNIT RECORD ON DATA SET (IC=4 IF BASE CASE
          C OR C=4 IF ALTERNATIVE CASE). PLANNING UNIT RECORD NOW
          C CONTAINS RESULTS OF COST CALCULATIONS.
          C
0069            WRITE(IC)     CN, CI,CT,(PCST(J),J=1,6),PCC,PUS,PUPA,PUPS,PUST,PCLP,
               1(IPCNT(J),J=1,6),(NCENT(J),J=1,6),(ICUT(J),J=1,6),NASCL,NSC,NMATRP,
               2(IACN(I(J),J=1,15),NPPCA,PNP,ITITLE)
0070        100 CONTINUE
0071            REWIND C
0072            REWIND 8
0073       1000 STOP
0074            END
```

```
0001            SUBROUTINE CDFIND
              C
              C DECLARATION STATEMENTS
              C
0002            DIMENSION FORM(6)
0003            REAL ASINF(4)
0004            INTEGER B,CN,CI,T1(10),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
               1PLTITL(150,8),PUN(8),PUC,PCS,PUPM,PUPJ,PUST,PCOP,T3(5),DT,PUCHR,
               2MTITLE(8)
0005            INTEGER BLANK/'BLANK'/,PRLM/'PRLM'/,ALTE/'ALTE'/,
               1ALL/'ALL'/,VAR/'VAR'/,BASE/'BASE'/,CORR/'CORR'/
0006            INTEGER CCN,CCI,CCT,CPUC
0007            COMMON ISTCST(17,3,6),NPPLN(17),PAP(17,6),NSINF,I1,I2,I3,B,CN,CI,
               1T1,T2,STITLE,PNTITL(15,8),PTITLE,PJTITL,COINFO,NASINF,PNC(15),
               2OPNFRM(15,3),PLTITL,PUN,PLC,PLS,PUPM,PUPJ,PUST,PCOP,IPENM(6),
               3NCENV(6),ICC(6),NNSCC,INCNR(6),NPATYP,IDURAT(15),NSITEC,NSTACC,
               4NPROJC,NPROCC,NUMNPC,NPU,CYCCPP,CYNSFF,SSM(15),CYMS(15),T3,DT,
               5MTITLE,IPC,IPCPRC,NSC(15,7),CCN,CCI,CCT,CPUC,N,NPLUS
              C
              C
              C THIS SUBROUTINE TESTS AND BRANCHES ON CARD TYPE.
              C READS CARD TYPES IN APPROPRIATE FORMAT AND WRITES
              C THE FORMATTED CARD TYPE ON DATA SET 3 FOR PERMANENT
              C DATA, AND ON DATA SET 8 FOR PLANNING UNIT DATA.
              C
              C
              C
              C INITIALIZE CARD COUNTERS FOR
              C PERMANENT DATA INPUT CARD TYPES
              C
              C
0008            NSITEC=0
0009            NPROJC=0
0010            NPPLOC=0
0011            NSTACC=0
0012            NPU=0
0013            NCMAPC=0
0014            NCCCIC=0
0015            NCASIC=0
              C
              C INITIALIZE CARD COUNTERS FOR
              C PLANNING UNIT CARD TYPES
              C
0016            NPCCS=0
0017            NPEAR=0
0018            NPACE=0
0019            NPOCC=0
0020            NPASO=0
0021            NPMAP=0
0022            NPORP=0
0023            NPASC=0
              C
              C READ DATA CARD  FROM DATA SET 1
              C
0024         40 READ(1,35,END=51) CN,CI,T1,T2
0025         35 FORMAT(I2,A4,10A4,I2)
0026            BACKSPACE 1
0027            GO TO(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17), CN
              C
              C HEADER CARD FOR DATA SET 3.
              C
```

```
0028            1 READ(1,43)CN,C1,T3
0029           43 FORMAT(I2,A4,5A4)
0030              WRITE(3,43)CN,C1,T3
0031              GO TO 40
            C
            C SITE TITLE CARD
            C
0032            2 NSITEC=NSITEC+1
0033              IF(NSITEC.GT.50) CALL DIMERR(2)
0034              READ (1,34)CN,C1,STITLE(NSITEC,1),(STITLE(NSITEC,J),J=2,8)
0035           34 FORMAT(I2,A4,I4,7A4)
0036              WRITE(3,34)CN,C1,STITLE(NSITEC,1),(STITLE(NSITEC,J),J=2,8)
0037              GO TO 40
            C
            C STAFF TITLE CARD
            C
0038            3 NSTACD=NSTACD+1
0039              IF(NSTACD.GT.15) CALL DIMERR(3)
0040              READ(1,34) CN,C1,MNTITL(NSTACD,1), (MNTITL(NSTACD,J),J=2,8)
0041              WRITE(3,34) CN,C1,MNTITL(NSTACD,1), (MNTITL(NSTACD,J),J=2,8)
0042              GO TO 40
            C
            C PROGRAM TITLE CARD
            C
0043            4 NPROGC=NPROGC+1
0044              IF(NPROGC.GT.20) CALL DIMERR(4)
0045              READ(1,34) CN,C1,PTITLE(NPROGC,1),(PTITLE(NPROGC,J),J=2,8)
0046              WRITE(3,34)CN,C1,PTITLE(NPROGC,1),(PTITLE(NPROGC,J),J=2,8)
0047              GO TO 40
            C
            C PROJECT TITLE CARD
            C
0048            5 NPRJCD=NPRJCD+1
0049              IF(NPRJCD.GT.50) CALL DIMERR(5)
0050              READ(1,34) CN,C1,PJTITL(NPRJCD,1),(PJTITL(NPRJCD,J),J=2,8)
0051              WRITE(3,34)CN,C1,PJTITL(NPRJCD,1),(PJTITL(NPRJCD,J),J=2,8)
0052              GO TO 40
            C
            C DISTRICT-WIDE CAPITAL OUTLAY INFLATION RATE CARD
            C
0053            6 READ(1,31) CN,C1,CCINFR
0054           31 FORMAT(I2,A4,F6.3)
0055              WRITE(3,31)CN,C1,CCINFR
0056              GO TO 40
            C
            C DISTRICT-WIDE INFLATION RATES FOR NSNCCCOSTS
            C
0057            7 READ(1,32) CN,C1,NNSINF,(NSINF(I),I=1,4)
0058           32 FORMAT(I2,A4,I2,4F6.3)
0059              WRITE(3,32)CN,C1,NNSINF,(NSINF(I),I=1,4)
0060              GO TO 40
            C
            C DISTRICT-WIDE STAFF DATA BY STAFF TYPE
            C
0061            8 NDMNPC=NDMNPC+1
0062              IF(NDMNPC.GT.15) CALL DIMERR(6)
0063              READ(1,33) CN,C1,MNC(NDMNPC),(DMNPR(NDMNPC,J),J=1,3)
0064           33 FORMAT(I2,A4,I4,3F6.3)
0065              WRITE(3,33) CN,C1,MNC(NDMNPC),(DMNPR(NDMNPC,J),J=1,3)
0066              GO TO 40
            C
```

```
              C PLANNING UNIT TITLE CARDS
              C
 0067             9 NPU=NPU+1
 0068               IF(NPU.GT.150) CALL DIMERR(9)
 0069               READ(1,34) CN,CI, PUTITL(NPU,1),(PUTITL(NPU,J),J=2,8)
 0070               WRITE(3,34)CN,CI,PUTITL(NPU,1),(PUTITL(NPU,J),J=2,8)
 0071               GO TO 40
              C
              C  PLANNING UNIT CARDS
              C
              C
              C TEST FOR WRITING PU STAFF DATA ON OSB
              C
 0072            10 IF(NPCDS.EQ.0) GO TO 127
 0073               CALL PURITE
              C
              C INITIALIZE STAFF DATA ARRAYS IN PREPARATION
              C FOR STAFF DATA OF NEXT PLANNING UNIT
              C
 0074               DO 103 I=1,17
 0075               NFFCR(I)=0
 0076           103 CONTINUE
 0077               DO 105 I=1,17
 0078               DO 104 K=1,6
 0079               PNP(I,K)=0.0
 0080           104 CONTINUE
 0081           105 CONTINUE
 0082               DO 108 I=1,17
 0083               DO 107 J=1,3
 0084               DO 106 K=1,6
 0085               ISTCST(I,J,K)=0
 0086           106 CONTINUE
 0087           107 CONTINUE
 0088           108 CONTINUE
              C
              C INITIALIZE ARRAY IN PREPARATION FOR
              C NSNCD DATA OF NEXT PLANNING UNIT.
              C
 0089               DO 110 I=1,5
 0090               DO 109 K=1,7
 0091               NSC(I,K)=0
 0092           109 CONTINUE
 0093           110 CONTINUE
              C
              C PLANNING UNIT DESCRIPTOR CARD
              C
 0094           127 PUPJ=0
 0095               PUST=0
 0096               DO 23 J=1,8
 0097               PUN(J)=0
 0098            23 CONTINUE
 0099               NPCDS=NPCDS+1
 0100               READ(1,36) CN,CI,DT,(PUN(J),J=1,8),POC,POS,PUPR,PUPJ,PUST,PCCF
 0101            36 FORMAT(I2,A4,I4,8A4,2I4,I2,I4,A4,I2)
 0102               OCN=CN
 0103               OCI=CI
 0104               OPOC=POC
 0105               ODT=DT
 0106               GO TO 40
              C
              C PLANNING UNIT ENROLLMENT BASE CARD
```

```
                     C
      0107              11 DO 21 J=1,6
      0108                 IPENR(J)=0
      0109              21 CONTINUE
      0110                 NFENR=NFENR+1
      0111                 READ(1,61) CN,CI,DT,PUC,(IPENR(J),J=1,6)
      0112              61 FORMAT(I2,A4,2I4,6I8)
      0113                 GO TO 40
                     C
                     C PLANNING UNIT NON-CURRENT EXPENSE REVENUE CARD
                     C
      0114              12 DO 62 J=1,6
      0115                 NCERV(J)=0
      0116              62 CONTINUE
      0117                 NFNCE=NFNCE+1
      0118                 READ(1,61) CN,CI,DT,PUC, (NCERV(J),J=1,6)
      0119                 GO TO 40
                     C
                     C PLANNING UNIT CAPITAL OUTLAY CARD
                     C
      0120              13 DO 68 J=1,6
      0121                 ICO(J)=0
      0122              68 CONTINUE
      0123                 NFOCO=NFOCO+1
      0124                 READ(1,61) CN,CI,DT,PUC,(ICO(J),J=1,6)
      0125                 GO TO 40
                     C
                     C PLANNING UNIT NSCC INFORMATION CARD
                     C
      0126              14 NFNSC=NFNSC+1
      0127                 READ(1,64) CN,CI,DT,PUC,NNSCC
      0128              64 FORMAT(I2,A4,2I4,I4)
      0129                 GO TO 40
                     C
                     C NSNCO COST CARD
                     C
      0130              15 NFASC=NFASC+1
      0131                 READ (1,75) CN,CI,DT,PUC,NSCSTY,NSFCRC,(IWORK(J),J=1,6)
      0132              75 FORMAT(I2,A4,3I4,I2,6I8)
      0133                 NSC(NSCSTY,1)=NSFCRC
      0134                 NSC(NSCSTY,2)=IWORK(1)
      0135                 IF(NSC(NSCSTY,1).NE.1) GO TO 40
      0136                 DO 65 I=3,7
      0137                 NSC(NSCSTY,I)=IWORK(I-1)
      0138              65 CONTINUE
      0139                 GO TO 40
                     C
                     C NUMBER OF STAFF TYPE INFORMATION CARD
                     C
      0140           16    DO 72 I=1,15
      0141                 IWORK1(I)=0
      0142              72 CONTINUE
      0143                 NFMNF=NFMNF+1
      0144                 READ (1,306) CN,CI,DT,PUC,NMNTYP,(IWORK1(I),I=1,15)
      0145             306 FORMAT(I2,A4,2I4,I2,15I3)
      0146                 GO TO 40
                     C
                     C STAFF DATA BY STAFF TYPE CARD.
                     C
      0147              17 NFCNF=NFCNF+1
      0148                 READ (1,308) CN,CI,DT,PUC,MNT,IFCR,ISAL,(PWORK(I),I=1,6)
```

```
0149        208 FORMAT(I2,A4,2I4,2I2,I8,3X,6F5.1)
0150            NPFCH(MAT)=IFOR
0151            ISTCST(MAT,1,1)=ISAL
0152            PAF(MAT,1)=PFCHK(1)
0153            IF(NPFCH(MAT).EQ.3) GO TO 40
0154            DO 112 I=2,6
0155            PAF(MAT,I)=PFCHK(I)
0156        112 CONTINUE
0157            GO TO 40
0158       51   CALL PWRITE
0159            RETURN
0160            END
```

```
0001                SUBROUTINE PLBACK
              C
              C DECLARATION STATEMENTS
              C
0002                REAL NSINF(4)
0003                INTEGER B,CN,CI,T1(18),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
                   1PUTITL(150,8),PUN(8),PUC,PUS,PUPR,PUPJ,PUST,PCUF,T3(5),DT,PUCHK,
                   2RTITLE(8)
0004                INTEGER BLNK/'BLNK'/,PHOR/'PHOR'/,ALTE/'ALTE'/,
                   1ALL/'ALL'/,VAR/'VAR'/,BASE/'BASE'/,CORR/'CORR'/
0005                INTEGER CCN,CCI,CDT,CPUC
0006                COMMON ISTCST(17,3,8),NPFOR(17),PNP(17,8),NSINF,I1,I2,I3,B,CN,CI,
                   1T1,T2,STITLE,MATITL(15,8),PTITLE,PJTITL,COINFR,NNSINF,MNC(15),
                   2MNNPR(15,3),PUTITL,PUN,PUC,PUS,PUPR,PUPJ,PUST,PCUF,IPENR(6),
                   3NCERV(6),ICU(6),NNSCU,IWORK(6),NPNTYP,IWORK1(15),NSITEC,NSTACO,
                   4NPROJC,NPROCC,NOPNPC,NPU,CYCLPF,CYNSPF,SSR(15),CYMS(15),T3,DT,
                   5RTITLE,IPG,IREFNC,NSC(5,7),CCN,CCI,CDT,CPUC,N,NPUOS
              C
              C
              C THIS SUBROUTINE PRINTS PLAYBACK REPORTS
              C
              C
0007                WRITE(6,2)(RTITLE(I),I=1,8)
0008              2 FORMAT('1',20X,'DATA INPUT PLAYBACK: ',8A4)
              C
              C TEST I2 FOR FULL PLAYBACK
              C
0009                IF(I2.NE.ALL)GO TO 1
              C
              C PERMANENT DATA SET 3 HEADER RECORD.
              C
0010                READ(3,43) CN,CI,T3
0011             43 FORMAT(I2,A4,5A4)
0012                WRITE(6,6) T3
0013              6 FORMAT('0',10X,5A4)
              C
              C SITE RECORDS.
              C
0014                WRITE(6,7)
0015              7 FORMAT('0',4X,'SITE TITLE CARDS')
0016                WRITE(6,8)
0017              8 FORMAT('0',12X,'CARD',6X,'CARD',6X,'SITE',6X,'SITE')
0018                WRITE(6,9)
0019              9 FORMAT(' ',11X,'NUMBER',2X,'IDENTIFIER',3X,'CODE',6X,'NAME')
0020                DO 10 I=1,NSITEC
0021                READ(3,34) CN,CI,(STITLE(I,J),J=1,8)
0022             34 FORMAT(I2,A4,I4,7A4)
0023                WRITE(6,14)CN,CI, STITLE(I,1),(STITLE(I,J),J=2,8)
0024             14 FORMAT('0',13X,I2,7X,A4,6X,I4,3X,7A4)
0025             10 CONTINUE
0026                WRITE(6,16)
0027             16 FORMAT('0',131('-'))
              C
              C STAFF TITLE RECORDS.
              C
0028                WRITE(6,18)
0029             18 FORMAT('1',4X,'STAFF TITLE CARDS')
0030                WRITE(6,20)
0031             20 FORMAT('0',12X,'CARD',6X,'CARD',5X,'STAFF',5X,'STAFF')
0032                WRITE(6,9)
0033                DO 22 I=1,NSTACO
```

```
0034            READ(5,34) CN,CI,(MNTITL(I,J),J=1,8)
0035            WRITE(6,14)CN,CI,MNTITL(I,1),(MNTITL(I,J),J=2,8)
0036         22 CONTINUE
0037            WRITE(6,10)
          C
          C PROGRAM TITLE RECORDS.
          C
0038            WRITE(6,24)
0039         24 FORMAT('1',6X,'PROGRAM TITLE CARDS')
0040            WRITE(6,26)
0041         26 FORMAT('0',12X,'CARD',6X,'CARD',5X,'PROGRAM',3X,'PROGRAM')
0042            WRITE(6,5)
0043            DO 28 I=1,NPROG
0044            READ(5,34) CN,CI,(PTITLE(I,J),J=1,8)
0045            WRITE(6,14)CN,CI, PTITLE(I,1),(PTITLE(I,J),J=2,8)
0046         28 CONTINUE
0047            WRITE(6,10)
          C
          C PROJECT TITLE RECORDS.
          C
0048            WRITE(6,30)
0049         30 FORMAT('1',6X,'PROJECT TITLE CARDS')
0050            WRITE(6,35)
0051         35 FORMAT('0',12X,'CARD',6X,'CARD',5X,'PROJECT',3X,'PROJECT')
0052            WRITE(6,5)
0053            DO 39 I=1,NPROJ
0054            READ(5,34)CN,CI,(PJTITL(I,J),J=1,8)
0055            WRITE(6,14)CN,CI,PJTITL(I,1),(PJTITL(I,J),J=2,8)
0056         39 CONTINUE
0057            WRITE(6,10)
          C
          C CAPITAL OUTLAY INFLATION RATE.
          C
0058            WRITE(6,37)
0059         37 FORMAT('0',6X,'DISTRICT-WIDE CC INFLATION RATE CARD')
0060            WRITE(6,38)
0061         38 FORMAT('0',12X,'CARD',6X,'CARD',6X,'CAPITAL OUTLAY')
0062            WRITE(6,40)
0063         40 FORMAT(' ',11X,'NUMBER',6X,'IDENTIFIER',3X,'INFLATION RATE')
0064            READ(5,31) CN,CI,CCINFR
0065         31 FORMAT(I2,A4,F6.3)
0066            WRITE(6,44)CN,CI,CCINFR
0067         44 FORMAT('0',13X,I2,7X,A4,6X,F6.3)
0068            WRITE(6,10)
          C
          C NSACO INFLATION RATE.
          C
0069            WRITE(6,46)
0070         46 FORMAT('0',6X,'NON-STAFF NON-CC INFLATION')
0071            WRITE(6,48)
0072         48 FORMAT(' ',6X,'RATE BY NSACO COST TYPE CARD')
0073            WRITE(6,50)
0074         50 FORMAT('0',12X,'CARD',6X,'CARD',11X,'NSACO',4(10X,'NSACO'))
0075            WRITE(6,52)
0076         52 FORMAT(' ',11X,'NUMBER',6X,'IDENTIFIER',5X,'COST TYPES',5X,'COST T
               1YPE1',5X,'COST TYPE2',5X,'COST TYPE3',5X,'COST TYPE4')
0077            READ(5,54) CN,CI,NNSIDP,(NSINFR(I),I=1,4)
0078         54 FORMAT(I2,A4,I6,4F6.3)
0079            WRITE(6,56)CN,CI,NNSIDP,(NSINFR(I),I=1,4)
0080         56 FORMAT('0',13X,I2,7X,A4,12X,I6,11X,F6.3,3(9X,F6.3))
0081            WRITE(6,10)
```

```
              C
              C DISTRICT-WIDE STAFF DATA CARD.
              C
 0082               WRITE(6,58)
 0083            58 FORMAT('1',6X,'DISTRICT-WIDE STAFF DATA CARDS')
 0084               WRITE(6,60)
 0085            60 FORMAT('0',11X,'CARD',6X,'CARD',5X,'STAFF',9X,'TURNOVER',6X,'SALAR
                   1Y INFLA-',7X,'FRINGE BENEFIT')
 0086               WRITE(6,62)
 0087            62 FORMAT(' ',11X,'NUMBER',6X,'IDENTIFIER',3X,'CODE',11X,'RATE',6X,'T
                   1ION PERCENT',10X,'PERCENTAGE')
 0088               DO 100 I=1,NUMDPC
 0089               READ(5,33) CN,CI,NAC(I),(EMBPH(I,J),J=1,3)
 0090            33 FORMAT(I2,A4,I4,3F6.3)
 0091               WRITE(6,66) CN,CI,NAC(I),(EMBPH(I,J),J=1,3)
 0092            66 FORMAT('0',12X,I2,7X,A4,6X,I4,2(10X,F6.2),15X,F6.3)
 0093           100 CONTINUE
 0094               WRITE(6,10)
              C
              C PLANNING UNIT TITLE RECORDS.
              C
 0095               WRITE(6,26)
 0096            26 FORMAT('1',6X,'PLANNING UNIT TITLE CARDS')
 0097               WRITE(6,72)
 0098            72 FORMAT('0',11X,'CARD',6X,'CARD',14X,'PLANNING',21X,'PLANNING')
 0099               WRITE(6,74)
 0100            74 FORMAT(' ',11X,'NUMBER',6X,'IDENTIFIER',10X,'UNIT CODE',16X,'UNIT
                   1TITLE')
 0101               DO 76 I=1,NPU
 0102               READ(5,78)CN,CI,PUTITL(I,1),(PUTITL(I,J),J=2,6)
 0103               WRITE(6,78) CN,CI,PUTITL(I,1),(PUTITL(I,J),J=2,6)
 0104            78 FORMAT('0',13X,I2,7X,A4,10X,I4,16X,7A4)
 0105            76 CONTINUE
 0106               WRITE(6,10)
              C
              C PLANNING UNIT PLREADA PRINT TITLE
              C
              C
              C PRINT PLREADA REPORT TITLE LINES.
              C
 0107               DO 800 I=1,8
 0108               WRITE(6,91)
 0109       800     CONTINUE
 0110       6       IF(ILLN.EQ.0) GO TO 802
 0111               WRITE(6,34)
 0112       34      FORMAT('0',10X,'PLANNING UNIT INPUT DATA FOR THE BASE CASE')
 0113               GO TO 804
 0114       802     WRITE(6,803)
 0115       803     FORMAT('0',10X,'PLANNING UNIT INPUT DATA FOR THE ALTERNATIVE CASE'
                   1)
 0116       804     DO 81 I=1,NPU
 0117               WRITE(6,82)  (PUTITL(I,J),J=1,6)
 0118               WRITE(6,91)
 0119               CALL PLREAD
              C
              C PLANNING UNIT DESCRIPTION CARD
              C
 0120               WRITE(6,83) (T(I,J),J=1,6),NPUC
 0121       83      FORMAT('0',5X,'CARD NO: 11',3X,'CARD INPUT RUNS ',3X,'VALUE ',
                   111X,3X,'PARMS:',6X,3X,'NO SALES ',I4)
 0122               WRITE(6,91)
 98   FORMAT('0')
      WRITE(6,87) [illegible]
 87   FORMAT('1',5X,'SITE CODE: ',I4,7X,'PROGRAM CODE: ',I4,3X,'PROGRAM
     1CODE: ',I4,' STATUS CODE: ',A4,5X,'CC FORECAST OPTION CODE: ',I2)
      WRITE(6,98)
      WRITE(6,96)
 96   FORMAT('0',132('-'))
      WRITE(6,200)
200   FORMAT('0',[illegible],'CY',[illegible],'Y1',[illegible],'Y2',[illegible],'Y3',[illegible],'Y4',[illegible],'Y5')
C
C
C ENROLLMENT BASE CARD
C
      WRITE(6,93) CT,PGC,[illegible]
 93   FORMAT('0',5X,'CARD NO: 11',3X,'CARD TYPE: PENR ',3X,'DATE: ',I4,
     113X,'CCODE:',I4,3X,'ENROLLMENT :',I6)
C
C NON-CLASSIFIED EARNING REVENUE CARD
C
      WRITE(6,95) CT,PGC,[illegible]
 95   FORMAT('0',5X,'CARD NO: 12',3X,'CARD TYPE: PNCR ',3X,'DATE: ',I4,
     113X,'CCODE:',I4,3X,'NCE REVENUE:',6I10)
C
C CAPITAL OUTLAY CARD
C
      WRITE(6,57) CT,PCC,(ICOC(J),J=1,6)
 57   FORMAT('0',5X,'CARD NO: 13',3X,'CARD TYPE: PUCO ',3X,'DATE: ',I4,
     113X,'CCODE:',I4,3X,'CAPITAL OUT:',6I10)
      WRITE(6,51)
      WRITE(6,96)
C
C ASACC CARDS
C
      WRITE(6,161) CT,PGC,NASCC
161   FORMAT('0',5X,'CARD NO: 14',3X,'CARD TYPE: PNSD ',3X,'DATE: ',I4,
     113X,'CCODE:',I4,3X,'NUMBER OF ASACC COST TYPES:  ',I3)
C
C
      WRITE(6,167) CT,PGC
167   FORMAT('0',5X,'CARD NO: 15',3X,'CARD TYPE: PASC ',3X,'DATE: ',I4,
     113X,'CCODE:',I4)
      WRITE(6,162)
162   FORMAT('0',10X,'ASACC COST CODE',6X,'FORECAST OPTION CODE',20X,'CY
     1',6X,'Y1',6X,'Y2',6X,'Y3',6X,'Y4',6X,'Y5')
      WRITE(6,51)
      DO 133 J=1,4
      IF(NSC(J,1).EQ.0) GO TO 133
      WRITE(6,105) J,NASC(J,1),(NSC(J,K),K=2,7)
105   FORMAT(' ',I12,I[illegible],21X,I6,[illegible],6I10)
133   CONTINUE
      WRITE(6,51)
      WRITE(6,96)
C
C STAFF INFORMATION CARD
C
      WRITE(6,114) CT,PGC
114   FORMAT('0',5X,'CARD NO: 16',3X,'CARD TYPE: PNNP ',3X,'DATE: ',I4,
     113X,'CCODE:',I4)
      WRITE(6,115) NSTYP,(NOWSTI(J),J=1,15)
115   FORMAT('0',11X,'STAFF TYPES IN PC: ',I2,5X,'STAFF TYPE CODES:',
     113X,15I4)
```

```
0157                 WRITE(6,933)
               C
               C PLANNING UNIT  STAFF TYPE CARD
               C
0158                 WRITE(6,110) CT,PUC
0159           110   FORMAT('0',5X,'CARD NO: 17',3X,'CARD TYPE: PUMP ',3X,'DATE: ',I4,
                    13X,'CODE: ',I4)
0160                 WRITE(6,911)
0161                 WRITE(6,703)
0162           703   FORMAT(' ',66X,'NUMBER OF POSITIONS')
0163                 WRITE(6,705)
0164           705   FORMAT(' ',10X,'STAFF TYPE CODE',6X,'FORECAST OPTION CODE',2X,'CY
                    1SALARY',17X,'CY',6X,'Y1',6X,'Y2',6X,'Y3',6X,'Y4',6X,'Y5')
0165                 DO 118 J=1,15
0166                 IF(NPPOS(J,IC,1).EQ.0) GO TO 118
0167                 WRITE(6,117) J,NPPOS(J),ICST(J,1,1),(PNP(J,K),K=1,6)
0168           117   FORMAT(' ',10X,I2,23X,I2,16X,I8,12X,6F8.1)
0169           118   CONTINUE
0170              61 CONTINUE
0171                 WRITE(6,200)
0172           200   FORMAT('1',51X,'RESOURCE REQUIREMENTS MODULE')
0173                 WRITE(6,201) (NTITLE(I),I=1,6)
0174           201   FORMAT(' ',39X,'DATA INPUT CARD COUNTS FOR ',6A4)
0175                 WRITE(6,202)
0176           202   FORMAT('0')
0177                 WRITE(6,204)
0178           204   FORMAT('0',13X,'CARD IDENTIFIER',15X,'CARD COUNT')
0179                 WRITE(6,206) ASITEC
0180           206   FORMAT('0',10X,'SITE',30X,I4)
0181                 WRITE(6,208) ASTAFF
0182           208   FORMAT('0',10X,'STAFF TITLE',23X,I4)
0183                 WRITE(6,210) APROGC
0184           210   FORMAT('0',10X,'PROGRAM',27X,I4)
0185                 WRITE(6,212) APROJC
0186           212   FORMAT('0',10X,'PROJECT',27X,I4)
0187                 WRITE(6,214) APU
0188           214   FORMAT('0',10X,'PLG UNIT TITLE',20X,I4)
0189                 WRITE(6,216) APUDS
0190           216   FORMAT('0',10X,'PLG UNIT DESCRIPTION',14X,I4)
0191                 WRITE(6,218) N
0192           218   FORMAT('0',10X,'TOTAL INPUT CARDS',17X,I4)
0193                 RETURN
0194                 END
```

```
 0001               SUBROUTINE PERDAT
 0002               REAL ASINP(4)
 0003               INTEGER C
 0004               INTEGER Z,CA,CI,T1(20),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
                   1PUTITL(150,8),PUN(8),PCC,PCS,PUPR,PUPJ,PUST,PCUP,T3(5),DT,PUCHK,
                   2RTITLE(8)
 0005               INTEGER CLRR/'CLRR'/,PHUR/'PHCR'/,ALTE/'ALTE'/,
                   1ALL/'ALL '/,VAR/'VAR '/,BASE/'BASE'/,UCRR/'UCRR'/
 0006               INTEGER CCR,CCI,CCT,CPCC
 0007               COMMON ISTEST(17,3,8),NPPER(17),PAP(17,8),NSINP,I1,I2,I3,B,CA,CI,
                   1T1,T2,STITLE,PATITL(15,8),PTITLE,PJTITL,COINFR,NASINF,MNC(15),
                   2CPARP(15,3),PUTITL,PCR,PCC,PCS,PUPR,PUPJ,PUST,PCCP,IPERM(8),
                   3NCEP(10),ICC(8),NASCC,INCRR(8),NPATYP,IMCARR(15),NSITEC,NSTACC,
                   4NPRJCC,NPRUCC,NCMRPC,NPU,CYCCPP,CYASPP,SSR(15),CYMS(15),T3,DT,
                   5RTITLE,IPC,IREPRL,NSC(5,7),CCR,CCI,CCT,CPCC,R,NPUGS
            C
            C
            C READS PERMANENT DATA CARD COUNTS AND READS
            C PERMANENT DATA FROM DATA SET 3 INTO CORE.
            C
            C
 0008               READ(5,1) NSITEC,NSTACC,NPRUCC,NPRJCC,NPU
 0009            1  FORMAT(6X,5(1X,I4))
 0010               READ(3,43) I3
 0011           43  FORMAT(6X,9A4)
 0012               DO 10 I=1,NSITEC
 0013               READ(3,36)(STITLE(I,J),J=1,8)
 0014           36  FORMAT(6X,14X,8A4)
 0015           10  CONTINUE
 0016               DO 22 I=1,NSTACC
 0017               READ(3,36)(PATITL(I,J),J=1,8)
 0018           22  CONTINUE
 0019               DO 20 I=1,NPRUCC
 0020               READ(3,36)(PTITLE(I,J),J=1,8)
 0021           20  CONTINUE
 0022               DO 25 I=1,NPRJCC
 0023               READ(3,36)(PJTITL(I,J),J=1,8)
 0024           25  CONTINUE
 0025               READ(3,31) COINFR
 0026           31  FORMAT(6X,F6.3)
 0027               READ(3,32) NASINF,(ASINP(I),I=1,4)
 0028           32  FORMAT(6X,I6,4F6.3)
 0029               DO 100 I=1,NSTACC
 0030               READ(3,33) MNC(I),(CPARP(I,J),J=1,3)
 0031           33  FORMAT(6X,I4,3F6.3)
 0032          100  CONTINUE
 0033               DO 76 I=1,NPU
 0034               READ(3,36)(PUTITL(I,J),J=1,8)
 0035           76  CONTINUE
 0036               RETURN
 0037               END
```

```
FORTRAN IV G LEVEL  20                TITLE            DATE = 72168        12/54/24              PAGE 0015

0001                  SUBROUTINE TITLE
                C
                C PRINT TITLE PAGE
                C
0002                  WRITE(6,5021)
0003            5021  FORMAT('1',10(' '/),' ',40X,'PLANNING UNIT COST FORECAST'/'0',41X,
                     1'SYSTEM FOR TRENTON''S EDUCATIONAL PLANNING(STEP)'/)
0004                  WRITE(6,5023)
0005            5023 FORMAT(10('0'/),' ',59X,'PREPARED BY'/' ',59X,'GOVERNMENT STUDIES
                     -AND SYSTEMS, INC.'/' ',59X,'3401 MARKET STREET'/' ',59X,'PHILADELP
                     -HIA, PENNSYLVANIA 19104'/)
0006                  WRITE(6,5027)
0007            5027 FORMAT('0',59X,'THIS PROJECT IS SUPPORTED THROUGH A GRANT BY'/' ',
                     -59X,'THE U.S. OFFICE OF EDUCATION,'/' ',59X,'NEW JERSEY DEPARTMENT
                     - OF EDUCATION'/' ',59X,'UNDER TITLE III, ESEA'/)
0008                  RETURN
0009                  END
```

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```
0001            SUBROUTINE PDREAD
          C
          C DECLARATION STATEMENTS
          C
0002            REAL NSINP(4)
0003            INTEGER B,CN,CI,T1(10),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
               1PCTITL(150,8),PUNI(8),PUC,PCS,PUPA,PUPJ,PUST,PCUP,T3(5),DT,PUCHR,
               2RTITLE(8)
0004            INTEGER CLAN/'CLAN'/,PHGM/'PHGM'/,ALTE/'ALTE'/,
               1ALL/'ALL'/,VAR/'VAR'/,BASE/'BASE'/,GUAR/'GUAR'/
0005            INTEGER CCN,CCI,CUT,CPUC
0006            COMMON [illegible]
               [illegible]
               [illegible]
               [illegible]
               [illegible]
               [illegible]
          C
          C
          C
          C READ PLANNING UNIT RECORD FROM DATA SET 8.
          C
          C
0007            READ (8)     CN, CI,[illegible],PUC,PCS,PUPA,PUPJ,PUST,PCUP,
               [illegible]
               [illegible]
0008            RETURN
0009            END
```

```
[illegible]
```

```
FORTRAN IV G LEVEL  20                CRCOST            DATE = 74100          12/54/24              PAGE 0018

  0001                   SUBROUTINE CRCOST
                   C
                   C DECLARATION STATEMENTS
                   C
  0002                   DIMENSION ICCP(3),INSCP(4,3),INPE(15)
  0003                   REAL ASINF(4)
  0004                   INTEGER Z,CN,CI,T(10),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
                        1PCTITL(50,8),PUN(8),PCC,PCS,PUPR,PUPJ,PUST,PCUP,T3(5),OT,PUCHR,
                        2NTITLE(8)
  0005                   INTEGER CLER/'CLER'/,PROF/'PROF'/,ALTE/'ALTE'/,
                        1ALL/'ALL '/,YAR/'YAR'/,BASE/'BASE'/,COMR/'COMR'/
  0006                   INTEGER CCR,CCI,CCT,CPUC
  0007                   COMMON ISTCST(17,5,8),NPPCHI(7),PNPE(7,8),NSINF,I1,I2,I3,D,CN,CI,
                        1I4,T2,STITLE,PNTITL(15,8),PTITLE,PJTITL,CUINFF,NASINF,MNC(15),
                        2CPRPR(15,3),PCTITL,PCN,PCC,PCS,PUPR,PUPJ,PUST,PCCF,IPRNK(6),
                        3NCCA(6),ICC(6),NASCC,ICNA(6),NNTYP,ICNA(15),NSITEC,NSTACC,
                        4UPR,CC,NPNCCC,NUMNPC,NPU,CYCCPF,CYASPP,SSN(15),CYNS(15),T3,OT,
                        5NTITLE,IPC,INFRC,ASC(5,7),OCR,OCI,OCT,OPUC,Z,NPUUS
                   C
                   C CALCULATES THE FOLLOWING Y1-Y5 COSTS FOR A PLANNING UNIT:
                   C SALARY, FRINGE BENEFIT, AND STAFF COSTS BY STAFF TYPE,
                   C ASACC COSTS, CAPITAL OUTLAY COSTS,CURRENT EXPENSE COST,
                   C AND NET COST(GROSS COST MINUS NCE REVENUE) FOR A PCU UNIT.
                   C
                   C
                   C
                   C WARNING: WHEN A PLANNING UNIT DOES NOT HAVE CY CAPITAL
                   C OUTLAY COST, CY ASACC COST, OR CY NUMBER OF POSITIONS FOR
                   C A STAFF TYPE, USE OPTION CODE 1, AND ENTER Y1-Y5 DATA
                   C DIRECTLY FOR THE COST TYPE FOR WHICH THE ABOVE CONDITION EXISTS.
                   C
                   C
  0008                   DO 800 I=1,3
  0009                   ICCP(I)=0
  0010               800 CONTINUE
  0011                   DO 805 I=1,4
  0012                   DO 805 J=1,3
  0013                   INSCP(I,J)=0
  0014               805 CONTINUE
                   C
                   C
                   C CAPITAL OUTLAY CALCULATION.
                   C
                   C
  0015                   GO TO(11,12,13),PCCP
                   C
                   C ADJUST CY CC BY COMPOUND
                   C INFLATION RATE FOR Y1-Y5.
                   C
                   C
                   C TEST ICC(1) TO DETERMINE IF CY CC COST IS POSITIVE.
                   C
  0016                11 IF(ICC(1).EQ.0) GO TO 30
  0017                34 DO 1 J=2,6
  0018                     ICC(J)=ICC(J-1)*(1.+(CINFR)**(J-1))+.5
  0019                 1 CONTINUE
  0020                     GO TO 13
                   C
                   C SET Y1-Y5 CC COST EQUAL TO ZERO IF
                   C CY CC COSTS ARE ZERO AND CC FORECAST
                   C OPTION CODE IS 2 OR 3.
```

```
                C
 0021               30 ICCF(1)=1
 0022               31 DO 33 J=2,6
 0023                  ICC(J)=0
 0024               33 CONTINUE
 0025                  GO TO 11
                C
                C CALCULATE Y1-Y5 CO USING AN INFLATION
                C RATE AND A PLANNING FACTOR(CO $/STUDENT).
                C 1 ADDED TO FORCE REAL OPERATION.
                C
                C
                C TEST ICC(1) TO DETERMINE IF CY COST IS POSITIVE.
                C
 0026               35 IF(ICC(1).NE.0) GO TO 38
 0027                  ICCF(2)=1
 0028                  GO TO 31
                C
                C
                C TEST CY PLANNING UNIT ENROLLMENT FOR POSITIVE VALUE.
                C
                C
                C WHEN CAPITAL OUTLAY FORECAST OPTION CODE IS 3, CY CO COST
                C IS POSITIVE, AND CY PLANNING UNIT ENROLLMENT IS ZERO,
                C CALCULATE Y1-Y5 COST AS THOUGH THE FORECAST OPTION CODE IS 2.
                C
                C
 0029               38 IF(IPENR(1).NE.0) GO TO 39
 0030                  ICCF(3)=1
 0031                  GO TO 34
                C
                C
                C CALCULATE CY CAPITAL OUTLAY PLANNING FACTOR(CY
                C ENROLLMENT AND CY COST ARE POSITIVE)
                C
                C
 0032               39 CYCOPF=(1.+ICC(1))/IPENR(1)
 0033                  DO 2 J=2,6
 0034                  ICC(J)=(CYCOPF*IPENR(J)*(1.+COINFR)**(J-1))+.5
 0035                2 CONTINUE
 0036               11 CONTINUE
                C
                C
                C NSHCO COST BY COST TYPE CALCULATION
                C
 0037                  DO 8 I=1,5
 0038                  IF(NSC(I,1).EQ.0) GO TO 8
 0039                  DO 7 K=3,7
 0040                  IF(NSC(I,1).EQ.1) GO TO 7
 0041                  IF(NSC(I,1).EQ.3) GO TO 17
                C
                C TEST CY NSHCO COST BY COST TYPE
                C FOR VALUE OTHER THAN ZERO.
                C
 0042               16 IF(NSC(I,2).EQ.0) GO TO 85
                C
                C ADJUST CY NSHCO BY COMPOUND
                C INFLATION RATE FOR Y1-Y5.
                C
 0043               81 NSC(I,K)=(NSC(I,K-1)*(1.+NSINF(I))**(K-2))+.5
 0044                  GO TO 7
```

```
0045            85 INSCF(I,1)=1
              C
              C
              C WHEN  THE NSNCO FORECAST OPTION CODE  FOR A
              C NSNCO COST TYPE IS 2 OR 3,AND CY NSNCO COST FOR
              C A NSNCO COST TYPE IS ZERO, SET Y1-Y5 NSNCO COST FOR THE
              C COST TYPE TO ZERO.
              C
              C
0046            86 NSC(I,K)=0
0047               GO TO 7
              C
              C TEST CY NSNCO COST BY COST
              C TYPE FOR VALUE GREATER THAN ZERO.
              C
0048            17 IF(NSC(I,2).NE.0) GO TO 82
0049               INSCF(I,2)=1
0050               GO TO 86
              C
              C TEST CY ENROLLMENT FOR POSITIVE VALUE
              C
              C
              C
              C WHEN THE NSNCO FORECAST OPTION CODE FOR A NSNCO
              C COST TYPE IS 3, CY NSNCO COST IS POSITIVE, AND
              C CY ENROLLMENT IS ZERO, CALCULATE Y1-Y5 NSNCO COST
              C FOR THE NSNCO COST TYPE AS THOUGH THE
              C FORECAST OPTION CODE EQUALS 2.
              C
              C
0051            82 IF(IPENR(I).NE.0) GO TO 83
0052               INSCF(I,3)=1
0053               GO TO 81
              C
              C CALCULATE Y1-Y5 NSNCO USING AN INFLATION
              C RATE AND Z PLANNING FACTOR(NSNCO $/STUDENT)
              C
0054            83 CYNSPF=(1.*NSC(I,2))/IPENR(I)
0055               NSC(I,K)=(CYNSPF*IPENR(K-1)*(1.+NSINF(I))**(K-2))+.5
0056             7 CONTINUE
0057             8 CONTINUE
              C
              C CALCULATE TOTAL NSNCO COSTS
              C
0058               DO 45 K=2,7
0059               DO 44 I=1,4
0060               NSC(5,K)=NSC(5,K)+NSC(I,K)
0061          44   CONTINUE
0062          45   CONTINUE
              C
              C INITIALIZE ARRAYS TO STORE STAFF-STUDENT RATIO,
              C AND CURRENT YEAR MEAN SALARY,EACH BY STAFF TYPE FOR A PLG UNIT.
              C
0063               DO 75 I=1,15
0064               SSR(I)=0.0
0065               CYMS(I)=0.0
0066               INPE(I)=0
0067            75 CONTINUE
              C
              C
              C SALARY AND STAFF COST BY STAFF TYPE
```

```
                C
                C
 0068                 DO 25 I=1,15
 0069                 IF(NPFOR(I).EQ.0)GO TO 25
                C
                C CALCULATE CY SALARY, FRINGE BENEFIT, AND STAFF COST.
                C
 0070                 ISTCST(I,3,1)=(ISTCST(I,1,1)*(1.+LPNPR(I,3)))+.5
 0071                 ISTCST(I,2,1)=ISTCST(I,3,1)-ISTCST(I,1,1)
 0072                 DO 24 K=2,6
                C
                C
                C TEST NUMBER OF POSITIONS FORECAST OPTION CODE FOR
                C 1 OR 2. (CY AND Y1-Y5 NUMBER OF POSITIONS
                C FOR A STAFF TYPE ARE INPUT DIRECTLY
                C
                C
 0073                 IF(NPFOR(I).EQ.1.OR.NPFOR(I).EQ.2) GO TO 28
                C
                C
                C FORECAST OPTION CODE FOR NUMBER OF POSITIONS IS 3.
                C CALCULATE NUMBER OF POSITION FOR A STAFF TYPE.
                C
                C
 0074                 IF(PNP(I,1).NE.0.AND.IPENR(I).NE.0) GO TO 20
 0075                 INPE(I)=1
 0076                 GO TO 24
                C
                C
                C CALCULATE STAFF TO STUDENT RATIO FOR A STAFF TYPE
                C AS THE RATIO OF CY PLANNING UNIT ENROLLMENT
                C DIVIDED BY THE CY NUMBER OF POSITIONS FOR A STAFF TYPE.
                C
                C
 0077              20 SSR(I)=IPENR(I)/PNP(I,1)
                C
                C
                C Y1-Y5 NUMBER OF POSITIONS FOR  A STAFF TYPE EQUAL Y1-Y5
                C ENROLLMENT FOR THE PLANNING UNIT DIVIDED BY
                C CY STAFF-STUDENT RATIO FOR THE STAFF TYPE.
                C
                C
 0078                 PNP(I,K)=IFENR(K)/SSR(I)
 0079                 GO TO 23
                C
                C
                C TEST CY NUMBER OF POSITIONS FOR A STAFF
                C TYPE FOR A POSITIVE VALUE
                C
                C
 0080              28 IF(PNP(I,1).NE.0.AND.IPENR(I).NE.0) GO TO 23
 0081                 INPE(I)=1
 0082                 GO TO 24
                C
                C CALCULATE CURRENT YEAR MEAN SALARY FOR A STAFF TYPE.
                C
 0083              23 CYMS(I)=ISTCST(I,1,1)/PNP(I,1)
 0084                 ISTCST(I,1,K)=(PNP(I,K)*CYMS(I)*(1.+LMNPR(I,2))**(K-1))+.5
 0085                 ISTCST(I,3,K)=(ISTCST(I,1,K)*(1.+LPNPR(I,3)))+.5
 0086                 ISTCST(I,2,K)=ISTCST(I,3,K)-ISTCST(I,1,K)
 0087              24 CONTINUE
```

```
0088           25 CONTINUE
             C
             C CALCULATE PLANNING UNIT TOTALS
             C
             C TOTAL NUMBER OF POSITIONS BY YR
0089              DO 58 K=1,6
0090              DO 56 I=1,15
0091              FAP(16,K)=FAP(16,K)+FAP(I,K)
0092           56 CONTINUE
0093           58 CONTINUE
             C
             C PLANNING UNIT TOTALS FOR SALARY COST,
             C FRINGE BENEFIT COST, AND STAFF COST
             C ACROSS ALL STAFF TYPES.
             C
0094              DO 64 K=1,6
0095              DO 62 J=1,3
0096              DO 60 I=1,15
0097              ISTCST(16,J,K)=ISTCST(16,J,K)+ISTCST(I,J,K)
0098           60 CONTINUE
0099           62 CONTINUE
0100           64 CONTINUE
0101              DO 66 K=1,6
             C
             C CALCULATE PLANNING UNIT TOTAL OE COST
             C
0102              ISTCST(17,1,K)=ISTCST(16,3,K)+ASC(5,K+1)
             C
             C CALCULATE PLANNING UNIT TOTAL COST
             C
0103              ISTCST(17,2,K)=ISTCST(17,1,K)+ICC(K)
             C
             C CALCULATE TOTAL LOCAL PLANNING UNIT COSTS
             C
0104              ISTCST(17,3,K)=ISTCST(17,2,K)-ACCRV(K)
0105           66 CONTINUE
0106              RETURN
0107              END
```

```
0001               SUBROUTINE PRTPU
             C
             C DECLARATION STATEMENTS
             C
0002               REAL NSINF(4)
0003               INTEGER B,CN,CI,T1(18),T2,STITLE(50,8),PTITLE(20,8),PJTITL(50,8),
                  1PUTITL(150,8),PUN(8),PUC,PLS,PUPR,PUPJ,PUST,PCOF,T3(5),DT,PUCHK,
                  2RTITLE(6)
0004               INTEGER BLNK/'BLNK'/,PHDR/'PHDR'/,ALTE/'ALTE'/,
                  1ALL/'ALL'/,VAR/'VAR'/,BASE/'BASE'/,CORR/'CORR'/
0005               INTEGER CCN,CCI,CDT,CPUC
0006               COMMON ISTCST(17,3,6),NPPCR(17),PNF(17,6),NSINF,I1,I2,I3,B,CN,CI,
                  1T1,T2,STITLE,PATITL(15,8),PTITLE,PJTITL,COINFR,NNSINF,MNC(15),
                  2UMNPR(15,3),PUTITL,PUN,PUC,PLS,PUPR,PUPJ,PUST,PCOF,IPENR(6),
                  3NCERV(6),ICD(6),NNSCO,IWORK(6),NMSTYP,IWORK1(15),NSITEC,NSTACD,
                  4NPROJC,NPPLOC,NUMNPC,NPU,CYCOFF,CYNSPF,SSR(15),CYMS(15),T3,DT,
                  5RTITLE,IPG,IREPNO,NSC(15,7),CCN,CCI,CDT,CPUC,N,NPUCS
             C
             C PRINTS PLANNING UNIT
             C DETAIL REPORT
             C
0007               IREPNO=IREPNO+1
0008               IPG=IPG+1
0009               WRITE(6,1) IREPNO
0010             1 FORMAT('1',52X,'TRENTON SCHOOL DISTRICT',30X,'REPORT NO. TSU-RRA-'
                  1,I4)
0011               WRITE(6,2) IPG
0012             2 FORMAT(' ',50X,'PLANNING UNIT DETAIL REPORT',28X,'PAGE ',I4)
0013               CALL STFIND(L)
0014               IF(I1.NE.BASE) GO TO 800
0015               WRITE(6,54)
0016         54    FORMAT('0',2X,'PLANNING UNIT REPORT FOR BASE CASE')
0017               GO TO 802
0018         800   WRITE(6,803)
0019         803   FORMAT('0',2X,'PLANNING UNIT REPORT FOR ALTERNATIVE CASE')
0020         802   WRITE(6,3) (PUN(J),J=1,8),PUC,(STITLE(L,J),J=2,8)
0021             3 FORMAT('0','PLANNING UNIT NAME: ',8A4,6X,'CODE: ',I4,'  SITE: ',
                  17A4)
0022               CALL PRFIND(L)
0023               WRITE(6,4) (PTITLE(L,J),J=2,8),PUST
0024             4 FORMAT('0','PROGRAM MEMBERSHIP:  ',7A4,6X,'PLANNING UNIT STATUS:',
                  11X,A4)
0025               WRITE(6,5)
0026             5 FORMAT('0','CURRENT EXPENSE',34X,'CY',13X,'Y1',13X,'Y2',13X,'Y3',
                  113X,'Y4',13X,'Y5')
0027               WRITE(6,6)
0028             6 FORMAT(' ',2X,'STAFF COSTS')
             C
             C PRINT STAFF COSTS BY STAFF
             C TYPE FOR A PLANNING UNIT.
             C
0029               DO 15 I=1,15
0030               IF(NPPCR(I).EQ.0) GO TO 15
0031               WRITE(6,7)(PATITL(I,J),J=2,8)
0032             7 FORMAT('0',5X,7A4)
0033               WRITE(6,8) NPPCR(I)
0034             8 FORMAT(' ',7X,'FORECAST OPTION CODE = ',I2)
0035               WRITE(6,9) (PNF(I,K),K=1,6)
0036             9 FORMAT('0',5X,'NUMBER OF POSITIONS',18X,F5.1,5(10X,F5.1))
0037               WRITE(6,10)(ISTCST(I,1,K),K=1,6)
0038            10 FORMAT(' ',5X,'SALARY COST',23X,I8,5(7X,I8))
```

```
 0039                WRITE(6,11)(ISTCST(1,2,K),K=1,6)
 0040             11 FORMAT(' ',5X,'FRINGE BENEFIT COST',15X,I8,5(7X,I8))
 0041                WRITE(6,12)(ISTCST(1,3,K),K=1,6)
 0042             12 FORMAT(' ',5X,'STAFF COST',24X,I8,5(7X,I8))
 0043             15 CONTINUE
 0044                WRITE(6,14)
 0045             14 FORMAT('0',5X,'UNIT TOTALS')
 0046                WRITE(6,5) (PAF(16,K),K=1,6)
 0047                WRITE(6,10)(ISTCST(16,1,K),K=1,6)
 0048                WRITE(6,11)(ISTCST(16,2,K),K=1,6)
 0049                WRITE(6,12)(ISTCST(16,3,K),K=1,6)
 0050                DO 47 I=1,4
 0051                IF(NSC(I,1).EQ.0) GO TO 47
 0052                WRITE(6,40) I,NSC(I,1),(NSC(I,K),K=2,7)
 0053          40    FORMAT('0',' ASSOC COST TYPE ',I1,' FORECAST CODE = ',I2,3X,
                    1I8,5(7X,I8))
 0054          47    CONTINUE
 0055                WRITE(6,18)(NSC(5,K),K=2,7)
 0056          18    FORMAT('0',' TOTAL ASSOC COSTS',24X,I8,5(7X,I8))
 0057                WRITE(6,16) (ISTCST(17,1,K),K=1,6)
 0058             16 FORMAT('0','TOTAL CURRENT EXPENSE',22X,I8,5(7X,I8))
 0059                WRITE(6,19)
 0060             19 FORMAT('0',132('-'))
 0061                WRITE(6,20) OCCP,(ICC(K),K=1,6)
 0062             20 FORMAT('0','CAPITAL-OUTLAY COST-FORECAST OPTION',I2,5X,I8,5(7X,I8
                    1))
 0063                WRITE(6,21) (ISTCST(17,2,K),K=1,6)
 0064             21 FORMAT('0','TOTAL PLANNING UNIT COST',15X,I8,5(7X,I8))
 0065                WRITE(6,22)(NCREV(K),K=1,6)
 0066             22 FORMAT('0','TOTAL NON-CURRENT EXPENSE REVENUE',10X,I8,5(7X,I8))
 0067                WRITE(6,23) (ISTCST(17,3,K),K=1,6)
 0068             23 FORMAT('0','TOTAL LOCAL PLANNING UNIT COST',13X,I8,5(7X,I8))
 0069                WRITE(6,19)
 0070                WRITE(6,24)
 0071             24 FORMAT(' ',50X,'SUBSIDIARY DATA')
 0072                WRITE(6,25)
 0073             25 FORMAT(' ',45X,'Y0',13X,'Y1',13X,'Y2',13X,'Y3',13X,'Y4',13X,'Y5')
 0074                WRITE(6,26)(IENROL(K),K=1,6)
 0075             26 FORMAT('0','ENROLLMENT BASE',25X,I8,5(7X,I8))
 0076                WRITE(6,27)
 0077             27 FORMAT('0',47X,'CY MEAN SALARY',10X,'STUDENT-STAFF RATIO')
 0078                DO 36 I=1,15
 0079                IF(NFSC(I,1).EQ.0) GO TO 36
 0080                IF(NFSC(I,1).NE.3) GO TO 42
 0081          45    WRITE(6,28) (NFSC(I,J),J=2,6),CMPS(I),SR(I)
 0082             28 FORMAT(' ',4X,I2,2X,I4,I8,F8.2,4X,F6.2)
 0083                GO TO 36
 0084          42    WRITE(6,46)(NFSC(I,J),J=2,6),CMPS(I)
 0085          46    FORMAT(' ',4X,I2,2X,I4,I8,F8.2,10X,'STAFF-STUDENT RATIO NOT CALCULATED
                    1 FOR OPTIONS 1 OR 2')
 0086             36 CONTINUE
 0087                RETURN
 0088                END
```

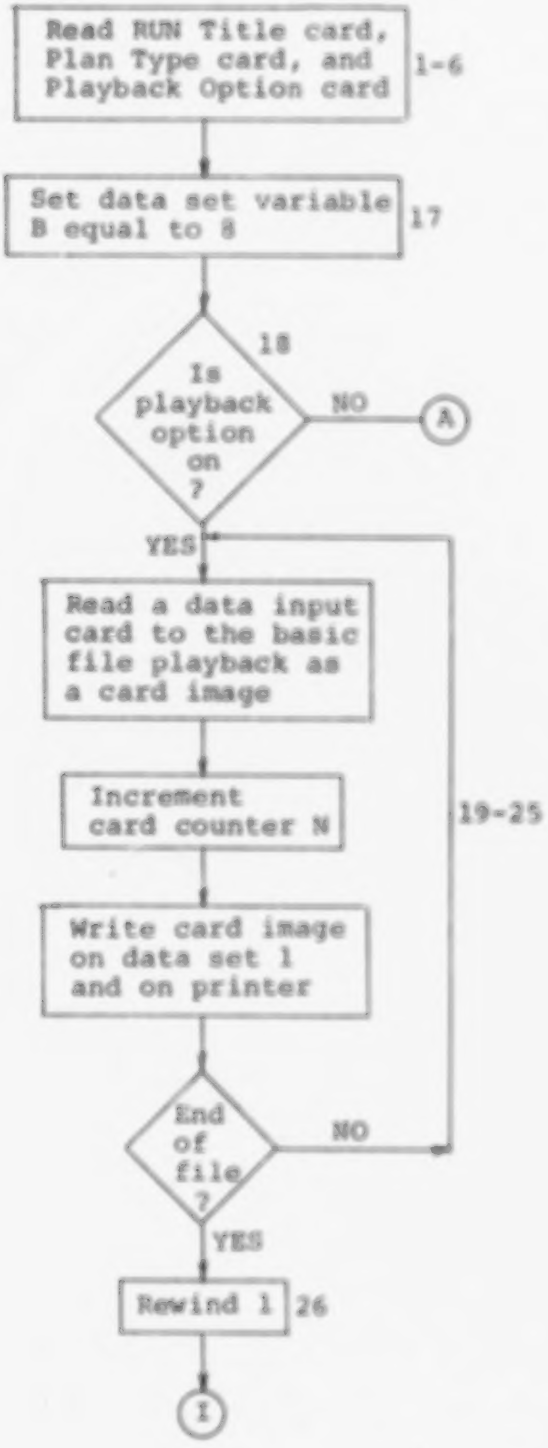
```
[illegible]                                    DATE = [illegible]        [illegible]          PAGE [illegible]
[illegible]          [illegible]
              C
              C DECLARATION STATEMENTS
              C
[illegible]          [illegible]
[illegible]          [illegible]
                    [illegible]
                    [illegible]
[illegible]          [illegible]
                    [illegible]
[illegible]          [illegible]
[illegible]          [illegible]
                    [illegible]
                    [illegible]
                    [illegible]
                    [illegible]
                    [illegible]
              C
              C
              C [illegible]
              C [illegible]
              C
              C
[illegible]          [illegible]
[illegible]          [illegible]
[illegible]          [illegible]
[illegible]     [illegible] [illegible]
[illegible]          RETURN
[illegible]          END
```

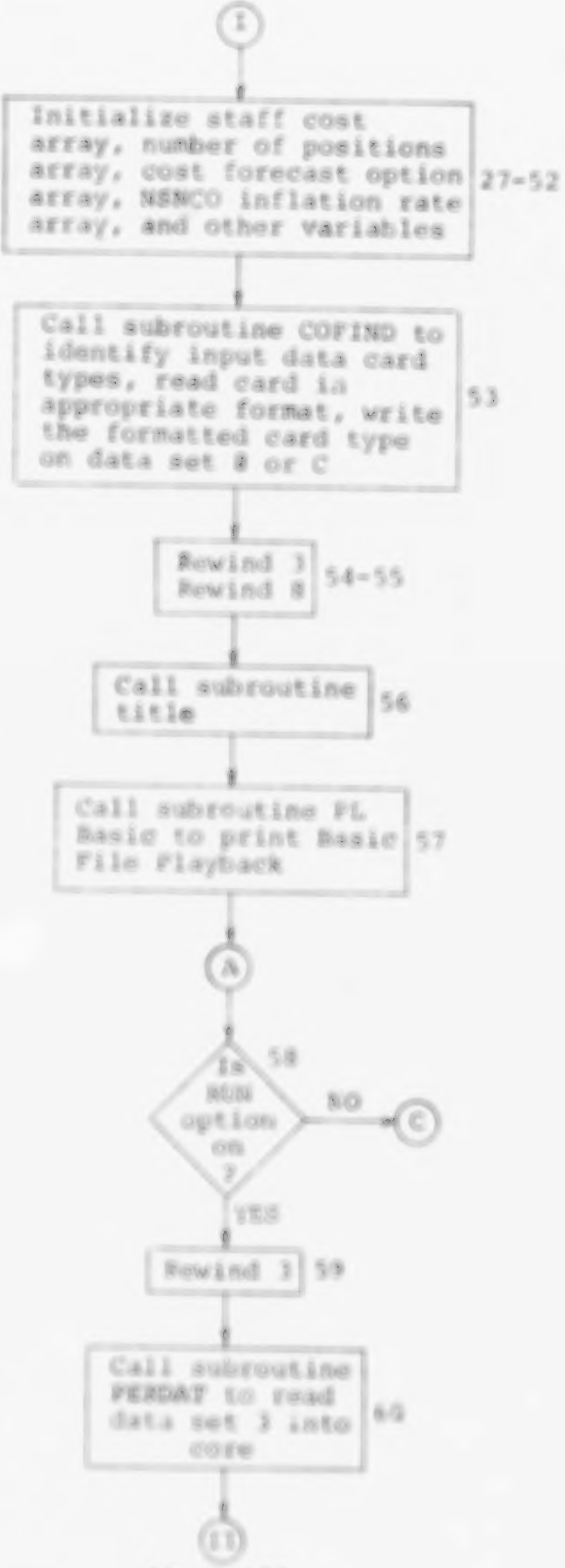
FLOWCHART OF
BASIC FILE PLAY BACK AND PLANNING
UNIT MODEL
COMPUTER PROGRAM

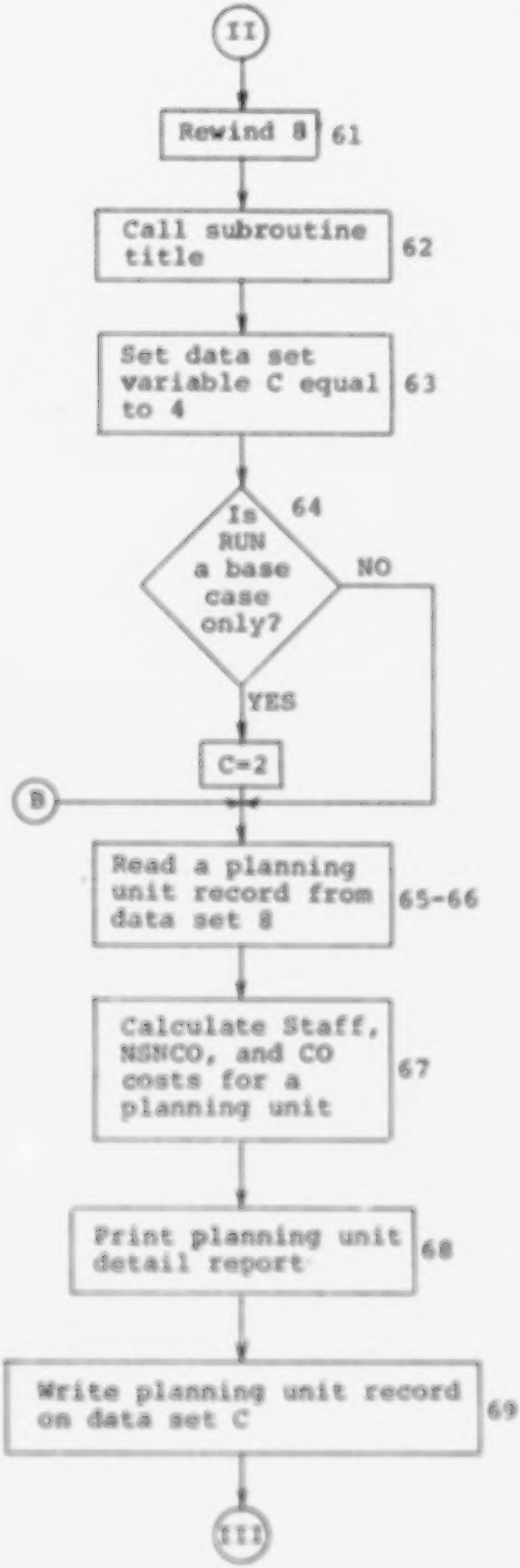
Chart III.3-6 presents a flowchart of the main routine of the Basic File Playback and Planning Unit Model. The numbers to the right of each box of the chart correspond to the statement numbers in the left margin of the source computer program listing.

Chart III.3-6

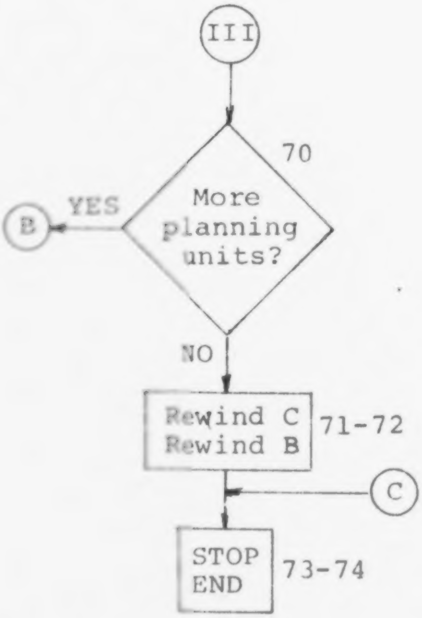
Flowchart of Basic File Playback and Planning Unit Model Main Computer Program


Read RUN Title card, Plan Type card, and Playback Option card
1-6
Set data set variable B equal to 8
17
18
Is playback option on ?
NO
A
YES
Read a data input card to the basic file playback as a card image
Increment card counter N
19-25
Write card image on data set 1 and on printer
End of file ?
NO
YES
Rewind 1
26
1


I
Initialize staff cost array, number of positions array, cost forecast option array, NSNCO inflation rate array, and other variables
27-52
Call subroutine COFIND to identify input data card types, read card in appropriate format, write the formatted card type on data set 8 or C
53
Rewind 3
Rewind 8
54-55
Call subroutine title
56
Call subroutine PL Basic to print Basic File Playback
57
A
Is RUN option on ?
58
NO
C
YES
Rewind 3
59
Call subroutine PERDAT to read data set 3 into core
60
II



II
Rewind 8
61
Call subroutine title
62
Set data set variable C equal to 4
63
Is RUN a base case only?
64
NO
YES
C=2
B
Read a planning unit record from data set 8
65-66
Calculate Staff, NSNCO, and CO costs for a planning unit
67
Print planning unit detail report
68
Write planning unit record on data set C
69
III


III
70
More planning units?
YES
B
NO
Rewind C
Rewind B
71-72
C
STOP
END
73-74

COMMENTED LISTING OF THE PROGRAM COST MODEL
COMPUTER PROGRAM

A commented listing of the Program Cost Model is shown in the following pages. The program is written in FORTRAN IV G level. The MAIN routine and its subroutines appear as follows:

PROGRAM OR SUBROUTINE	EXPLANATION	PAGE
MAIN	Controls running of the program cost model.	001-006
PGPRNT	Prints program detail reports.	007-008
PRGCST	Calculates Y1-Y5 costs by cost type for a program.	012
PUFIND	Searches planning unit array to find a match on planning unit code from the planning unit record.	013
PJFIND	Searches project title array to find match for a project code in an alternative plan.	014

```
                C
                C THIS PROGRAM PERFORMS THE FOLLOWING:
                C  READS THE DATA SETS WITH PERMANENT DATA AND PLANNING UNIT DATA;
                C  FOR AN ALTERNATIVE CASE,READS THE PROJECTS IN THE PLAN;
                C  AGGREGATES COSTS BY PROGRAM
                C
                C
                C
                C
                C DECLARATION STATEMENTS
                C
                C
 0001                 REAL NSINF(4),OWNPST(15,6),TCTHIR(15,6)
 0002                 INTEGER RTITLE(8),STITLE(50,8), PTITLE(20,8),PJTITL(50,8),
                     1PLTITL(150,8),B,C,BASE/'BASE'/,IS(18),PLNCDE,PLNTYP,INPJ/'INPJ'/,
                     2BLNK/'BLNK'/,PJCIP(50),FCLL/'FCLL'/,SUPP/'SUPP'/,PROJ/'PROJ'/,
                     3PJDF/'PJDF'/,ALTE/'ALTE'/,PLATLE(5),IPRS(20,5,6),ICHSUM(9,6)
 0003                 COMMON NSITEC,NSTACD,NPROGC,NPRJCD,NPU,RTITLE,ICT,II,IPC,IREFNC,
                     1STITLE,NSTITL(15,8),PTITLE,PJTITL,CCINFR,AASINF,ASINF,NAC(15),
                     2OWNER(15,3),IR,IQ,PLNCDE,PLNTYP,NPJIP,PJCIP,IIS,IPPMN(16,3,6),
                     3IAPRCC(6,6),APRGAP(16,6),IAPMN(16,3,6),IAPRGC(6,6),APRGAP(16,6),
                     4NSUPP,NPRJ,NPCE,ISUBP(100),INPRJ(100),INPCF(100),NSTTYP(15),PLNTLE
 0004                 COMMON PUTITL
                C
                C INPUT CARD COUNTS
                C USED AS DO-PARAMETERS
                C
 0005                 READ(5,1) NSITEC,NSTACD,NPROGC,NPRJCD,NPU
 0006           1     FORMAT(6X,5(1X,I4))
                C
                C INPUT RUN TITLE
                C
 0007                 READ(5,2)(RTITLE(I),I=1,8)
 0008           2     FORMAT(8X,8A4)
                C
                C INPUT PLAN TYPE CARD
                C
 0009                 READ(5,3) ICT,II
 0010           3     FORMAT(2X,A4,4X,A4)
 0011                 IPC=0
 0012                 IREFNC=2599
                C INPUT PERMANENT DATA
                C FROM DATA SET 3 INTO CORE
 0013                 REWIND 3
 0014                 READ(3,43) I3
 0015              43 FORMAT(6X,5A4)
 0016                 DO 10 I=1,NSITEC
 0017                 READ(3,34)(STITLE(I,J),J=1,8)
 0018              34 FORMAT(6X,I4,7A4)
 0019              10 CONTINUE
 0020                 DO 22 I=1,NSTACD
 0021                 READ(3,34)(NSTITL(I,J),J=1,8)
 0022              22 CONTINUE
 0023                 DO 28 I=1,NPROGC
 0024                 READ(3,34)(PTITLE(I,J),J=1,8)
 0025              28 CONTINUE
 0026                 DO 35 I=1,NPRJCD
 0027                 READ(3,34)(PJTITL(I,J),J=1,8)
 0028              35 CONTINUE
 0029                 READ(3,31) CCINFR
 0030              31 FORMAT(6X,F6.3)
```

```
0031                READ(3,32) ANSIDE,(NSIDE(I),I=1,4)
0032             32 FORMAT(6X,I2,4F6.3)
0033                DO 100 I=1,NSTAGE
0034                READ(3,33) PAC(I),(CPSNR(I,J),J=1,7)
0035             33 FORMAT(4X,I4,7F6.3)
0036            100 CONTINUE
0037                DO 36 I=1,NPL
0038                READ(3,35)(PLTITL(I,J),J=1,8)
0039             36 CONTINUE
0040                REWIND 3
              C
0041                IF(I1.EQ.ASC) GO TO 105
              C
              C INPUT ALPHA OF ALTERNATIVE
              C CASES CARD.
              C
0042                READ(5,4) CA,CI,NALC
0043              4 FORMAT(A2,A6,1X,I2)
0044                NALTC=0
              C INPUT ALTERNATIVE CASE
              C SPECIFICATION CARD
              C
0045                READ(5,6) ICA, ICI,IS,(IP(I),I=1,18)
0046              6 FORMAT(A2,A6,A2,18I4)
0047            500 NALTC=NALTC+1
0048                PLACE=IP
0049                PLATYP=IP(6)
0050                DO 7 I=1,5
0051                PLAT(I)=IP(I)
0052              7 CONTINUE
0053                IPG=IPG+1
0054                WRITE(6,8) (PTITLE(I),I=1,8),IPG
0055              8 FORMAT('1',5X,8A6,67X,'PAGE ',I3)
0056                WRITE(6,9) IS,(IP(I),I=1,5)
0057              9 FORMAT('0','ALTERNATIVE PLAN: ',A2,2X,5A4)
0058                IF(PLATYP.EQ.ISPJ) GO TO 23
0059                WRITE(6,11)
0060             11 FORMAT('0','ALL THE PROJECTS ARE TO BE INCLUDED IN THIS ALTERNATIV
                   1E PLAN')
0061                GO TO 25
0062             23 NPJIF=0
0063             21 J=7
0064                DO 24 I=1,5
0065                IF(IP(J).EQ.BLANK) GO TO 80
0066                NPJIF=NPJIF+1
0067                IF(NPJIF.LE.50) GO TO 50
0068                IPG=IPG+1
0069                WRITE(6,8) (PTITLE(I),I=1,8),IPG
0070                WRITE(6,120)
0071            120 FORMAT('0','TOO MANY PROJECTS FOR PRESENT STORAGE')
0072                WRITE(6,121)
0073            121 FORMAT(' ','HAVE SYSTEM ANALYST INCREASE DIMENSIONS**')
0074                WRITE(6,122)
0075            122 FORMAT(' ','CONCERNED WITH THIS DATA TYPE')
0076                GO TO 1000
0077             50 PJC(NPJIF)=IP(J)
0078                J=J+1
0079             24 CONTINUE
0080                IC=18
0081                READ(5,6) ICA,ICI,IS,(IP(I),I=1,18)
0082                IF(IS.EQ.ISS) GO TO 21
```

```
0083            80 IF(NPJIP.GT.0) GO TO 81
0084               IIS=18
0085               GO TO 75
0086            81 WRITE(6,82)
0087            82 FORMAT('0','THE PROJECT CODES OF PROJECTS TO BE INCLUDED IN THIS A
                  1LTERNATIVE PLAN WERE READ IN')
0088            75 WRITE(6,83)
0089            83 FORMAT('0','THE FOLLOWING PROJECTS ARE INCLUDED IN THE ALTERNATIVE
                  1PLAN')
0090               WRITE(6,84)
0091            84 FORMAT('0',10X,'PROJECT',7X,'PROJECT'/' ',10X,'CODE',10X,'NAME')
0092               IF(PLNTYP.EQ.INPJ) GO TO 44
0093               DO 88 I=1,NPRJCD
0094               WRITE(6,85) PJTITL(I,1),(PJTITL(I,J),J=2,8)
0095            85 FORMAT(' ',11X,A4,11X,7A4)
0096            88 CONTINUE
0097               GO TO 100
0098            44 DO 49 J=1,NPJIP
0099               CALL PJFIND(J,L)
0100               WRITE(6,85) PJTITL(L,1),(PJTITL(L,K),K=2,8)
0101            49 CONTINUE
              C
              C INITIALIZE ARRAYS TO STORE PROGRAM
              C SUMMARY DATA AND DISTRICT-WIDE SUMMARIES
              C
0102          100   DO 54 I=1,NPRGCC
0103                DO 53 J=1,5
0104                DO 52 K=1,6
0105                IPHS(I,J,K)=0
0106             52 CONTINUE
0107             53 CONTINUE
0108             54 CONTINUE
0109                DO 58 I=1,5
0110                DO 56 K=1,5
0111                IDWSUM(I,K)=0
0112             56 CONTINUE
0113             58 CONTINUE
0114                DO 273 I=1,KSTAGE
0115                DO 273 K=1,6
0116                CNSPIT(I,K)=0.0
0117          273   CONTINUE
              C
              C ROUTINE FOR THE  CALCULATION
              C OF COSTS FOR A PROGRAM
              C
0118                DO 500 I=1,NPRGCC
              C
              C INITIALIZE COUNTERS AND ARRAYS TO STORE
              C PLANNING UNIT CODES  IN A PROGRAM BY STATUS CODE
              C
0119                NSLPP=0
0120                NPRJ=0
0121                NPCE=0
0122                DO 47 J=1,100
0123                ISLPP(J)=0
0124                INPRJ(J)=0
0125                INPCE(J)=0
0126             47 CONTINUE
              C
              C INITIALIZE FLAG TO INDICATE IF A PROGRAM
              C HAS A PARTICULAR STAFF TYPE
```

```
                 C
      0127             DO 55 J=1,15
      0128             RESULT(J)=0
      0129          55 CONTINUE
                 C
                 C INITIALIZE ARRAYS FOR ACCUMULATING DATA [illegible]
                 C [illegible]
                 C [illegible]
                 C
      0130             DO 18 J=1,15
      0131             DO 16 K=1,6
      0132             [illegible]
      0133             DO 17 L=1,7
      0134             [illegible]
      0135          17 CONTINUE
      0136          16 CONTINUE
      0137          18 CONTINUE
      0138             DO 19 J=1,8
      0139             DO 19 K=1,6
      0140             [illegible]
      0141          19 CONTINUE
      0142          1[illegible] CONTINUE
      0143             CALL [illegible]
      0144             [illegible]
      0145             DO 206 J=1,16
      0146             DO 205 K=1,6
      0147             [illegible]
      0148             DO 202 L=1,7
      0149             [illegible]
      0150         202 CONTINUE
      0151         205 CONTINUE
      0152         206 CONTINUE
      0153             DO 207 J=1,8
      0154             DO 208 K=1,6
      0155             [illegible]
      0156         208 CONTINUE
      0157         207 CONTINUE
      0158             CALL [illegible]
                 C
                 C [illegible]
                 C [illegible]
                 C
      0159          61 DO 212 J=1,8
      0160             DO 211 K=1,6
      0161             [illegible]
      0162         211 CONTINUE
      0163         212 CONTINUE
      0164             DO 215 J=1,8
      0165             DO 213 K=1,6
      0166             [illegible]
      0167         213 CONTINUE
      0168         215 CONTINUE
      0169             DO 224 J=1,5
      0170             DO 222 K=1,6
      0171             [illegible]
      0172         222 CONTINUE
      0173         224 CONTINUE
                 C
                 C [illegible]
                 C
      0174             DO [illegible]
```

```
[illegible]
```

```
[illegible]
```

```
[illegible]
```

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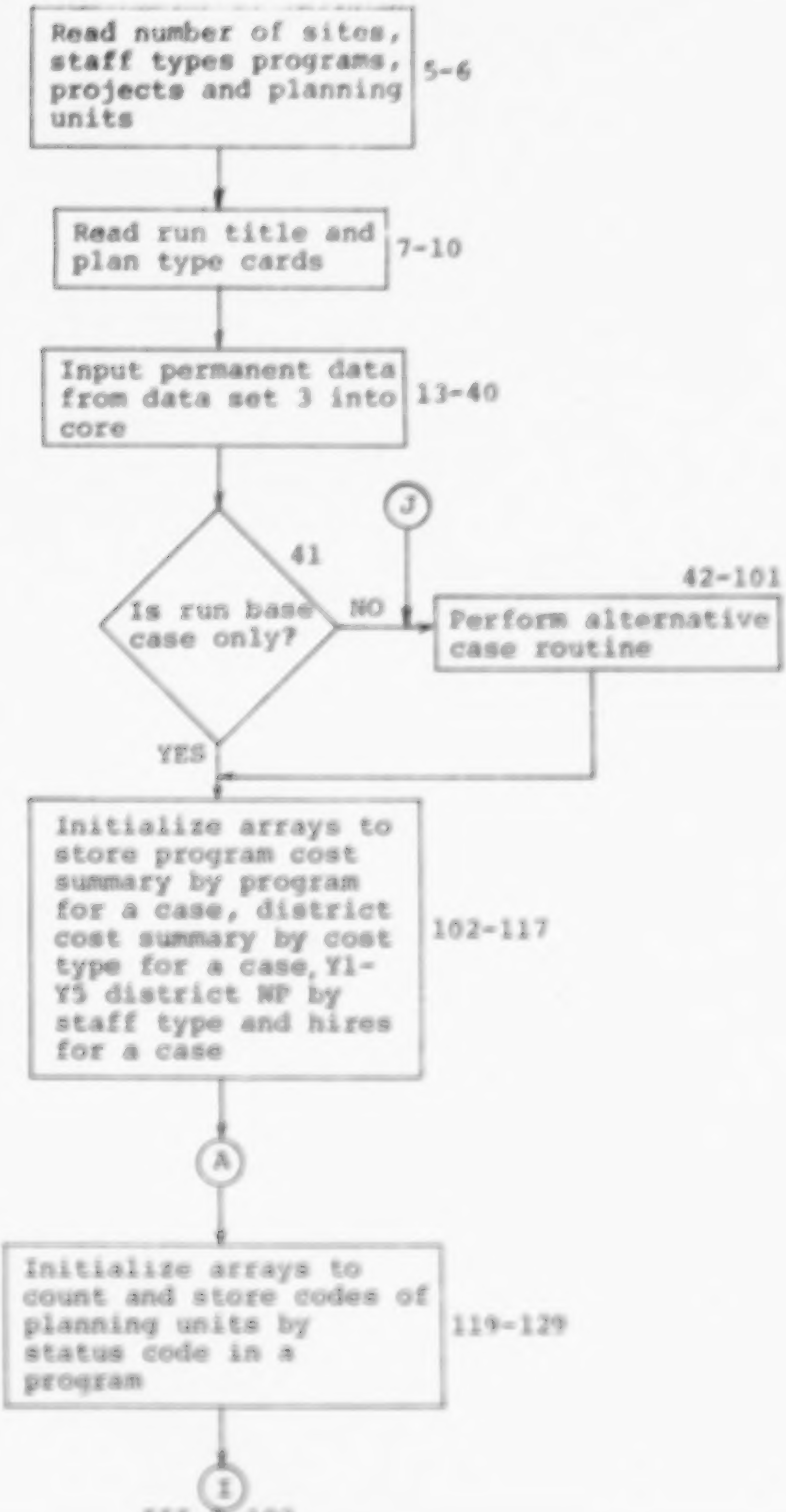
```
FORTRAN IV G LEVEL 21      [illegible]      DATE = [illegible]      [illegible]      PAGE [illegible]
[illegible]
```

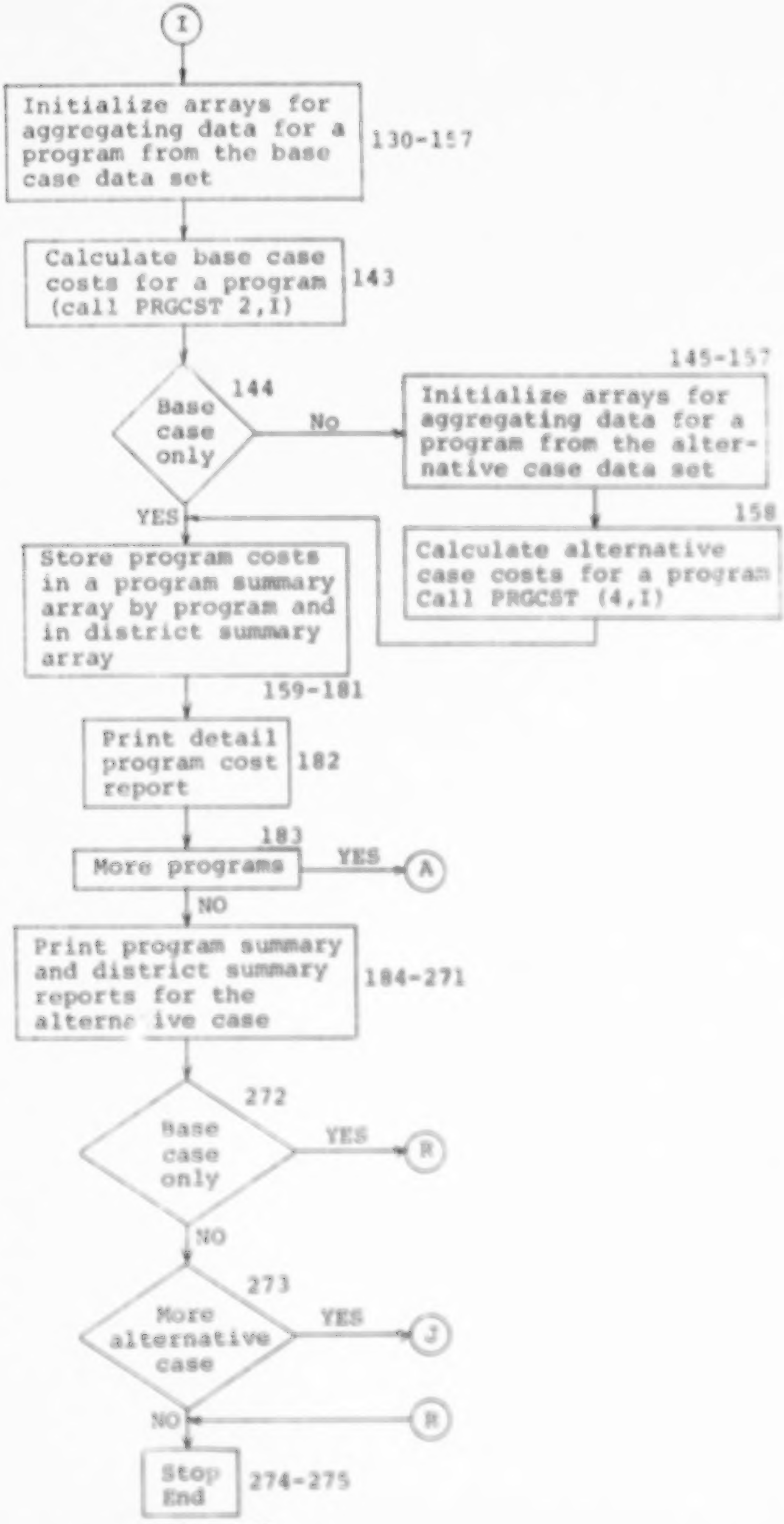
FLOWCHART OF
PROGRAM COST MODEL.

Chart III.3-7 presents a flowchart of the main routine of the Program Cost Model. The numbers to the right of each box of the chart correspond to the statement numbers in the left margin of the source computer program listing.

Chart III.3-7

Flowchart of the Program Cost Model of the Resource Requirement Module


Read number of sites, staff types programs, projects and planning units
5-6
Read run title and plan type cards
7-10
Input permanent data from data set 3 into core
13-40
J
41
Is run base case only?
NO
42-101
Perform alternative case routine
YES
Initialize arrays to store program cost summary by program for a case, district cost summary by cost type for a case, Y1-Y5 district MP by staff type and hires for a case
102-117
A
Initialize arrays to count and store codes of planning units by status code in a program
119-129
I


I
Initialize arrays for aggregating data for a program from the base case data set
130-157
Calculate base case costs for a program (call PRGCST 2,I)
143
Base case only
144
No
145-157
Initialize arrays for aggregating data for a program from the alternative case data set
158
Calculate alternative case costs for a program Call PRGCST (4,I)
YES
Store program costs in a program summary array by program and in district summary array
159-181
Print detail program cost report
182
183
More programs
YES
A
NO
Print program summary and district summary reports for the alternative case
184-271
272
Base case only
YES
R
NO
273
More alternative case
YES
J
NO
R
Stop End
274-275

COMMENTARY ON ADAPTING PROGRAM
COST MODEL PROGRAM DECK

The Program Cost Model program deck is converted to a Site Cost Report Generator program deck and a Project Cost Report Generator program deck by replacing nine cards and adding five new cards to the original program deck.

The following changes are made to the Program Cost Model program deck:

a. Instructions are added (five new cards) to store site data or project data in the program cost arrays. This permits the use of the Program Cost Model program deck without wholesale changes.

b. Replace eight format statement cards to change report titles to reflect site and project titles.

c. Replace one conditional statement to compare planning unit site code or project code to a site or project code in the site title or project title arrays.

VARIABLE DICTIONARY OF THE RESOURCE REQUIREMENTS MODULE COMPUTER PROGRAMS

The variable dictionary for the component computer programs of the Resource Requirements Module is presented below. A single variable dictionary is provided since many of the same variables are used across all programs. Furthermore, since the Program Cost Model is adapted to become the Site Cost Model, program variables are applicable to site cost data and project cost data for the Site Cost Model and Project Cost Model.

VARIABLE	DEFINITIONS
ALL	Variable to store the literal ALL signifying that a playback is required for both permanent and planning unit data input.
ALTE	Variable used to store the literal ALTE, indicating that a particular run is an alternative case computer run.
B	Variable name of a temporary data set for storing planning unit records.
BASE	Variable used to store the literal BASE, indicating that a particular computer run is a base case run.
BLANK	Variable to store the literal BLANK.
BPRGNP(J,K)	Number of positions by staff type for a program (for the base case). Subscript J ranges over staff types. Subscript K ranges over years.

C	Variable name of a data set for storing planning unit records (calculation results included). C=2 represents base case planning units. C=4 represents alternative case planning units.
CARD(I)	Temporary variable used for storing a data card input as a card image. Subscript I ranges over the characters necessary to store the card image.
CI	Card type indentifier of a data input card.
CN	Card type number of a data input card.
COCOIR	District-wide inflation rate for capital outlay cost for the current year.
CORR	Variable to store the literal 'CORR' which indicates that the planning unit cost model is to be run.
CPCOPF	Capital outlay planning factor for the current year.
CSMS(I)	Mean salary for the current year. Subscript I ranges over staff types.
CYNSPF	Non-staff non-capital outlay planning factor for the current year for a planning unit.
DWSTFD(I,J)	Working storage area used to store staff data used on a district-wide basis. Subscript I ranges over the staff types. Subscript J ranges over the following data by staff type: J=1 is the turnover rate; J=2 is the salary inflation percent; and J=3 is the fringe benefit percent.

DT	Date of planning unit data in the form MMYY, where MM= numeric form of the month and YY=last two digits of the year.
DNNPST(I,K)	Number of positions by staff type for the district. Subscript I ranges over staff types. Subscript K ranges over years.
FULL	Variable use to store the literal value FULL which indicates all projects are to be concluded in a case.
IAPMN(J,L,K)	Staff costs of a program associated with a particular set of projects in an alternative case. Subscript J ranges over staff types. Subscript L ranges over various staff costs as follows: L=1 represents salary cost for a program; L=2 represents fringe benefit cost for a program; and L=3 represents.
IAPRGE(J,K)	All other non staff costs added to base case program costs as a result of running an alternative case. (See IBPRGE).
IBPMN(J,L,K)	Staff costs for a program for the base case. Subscript J ranges over staff types. Subscript L ranges over various staff costs as follows: L=1 represents salary cost for a program; L=2 represents fringe benefit cost for a program; and L=3 represents total staff cost for a program (salary plus fringe benefit). Subscript K ranges over years.
IBPRGE(J,K)	All other non-staff costs associated with a program (for a base case). Subscript J ranges over the following cost types:

	$J=1$ represents non-staff non-capital outlay cost for a program; $J=2$ represents capital outlay cost for a program; $J=3$ represents current expense costs (NSNCO plus staff cost) for a program; $J=4$ represents gross cost for a program (current expense plus capital outlay); $J=5$ represents non-current expense revenues for a program; and, $J=6$ represents local cost for a program (gross cost minus non-current expense revenues). Subscript K ranges over years.
DCS	Card type identifier of alternative case specification card.
DCN	Card number of alternative case specification card.
DCO(I)	Capital outlay cost for a planning unit. Subscript I ranges over years.
DCT	Card type identifier.
DCWSUM(J,K)	Cost summary for the district. Subscript J ranges over cost types. Subscript K ranges over years. Subscript J has the following representation: $J=1$ Salaries $J=2$ Fringe Benefits $J=3$ Staff Cost $J=4$ NSNCO $J=5$ Current expense cost $J=6$ Capital outlay $J=7$ Gross cost $J=8$ Non-current expense revenue $J=9$ Local cost
DFOR	Forecast option code for calculation of the number of positions of a staff type.
DNPDS(I)	Codes of planning units in a program with the status code of PJDS (project design). Subscript I ranges over planning unit codes.

INPJ	Variable used to store the literal 'INPJ' which indicates projects to be included in an alternative case are to be input.
INPRJ(I)	Codes of planning units in a program with the status code of 'PROJ'. Subscript I ranges over planning unit codes.
IP	Temporary subscript used to indicate a program.
IPENR(J)	Planning unit enrollment. Subscript J ranges over years. J=1 represents the current year, J=2 represents Y1, J=3 represents Y2, and so on.
IPG	Page number.
IPRS(I,J,K)	Cost summary by program. Subscript I ranges over programs Subscript J ranges over various costs and subscript K over years. Subscript J has the following representations: J=1 is Capital outlay J=2 is Current expense cost J=3 is Gross cost J=4 is Non-current expense revenue J=5 is Local Costs
IREPNO	Report number.
ISAL	Temporary variable used to store the current year salary of a staff type.
IPUCST(I,J,K)	Planning unit staff costs. Subscript I ranges over staff types. Subscript J ranges over the following: J=1 represents planning unit salary cost; J=2 represents planning unit fringe benefit cost; and J=3 represents planning unit total cost. Subscript K ranges over years.

	Subscript I=16 represents total salary cost, total fringe benefit costs, and total staff costs for a planning unit as Subscript J ranges from 1 to 3, respectively.
	Subscript I=17 represents the following: ISTCST(17,1,K) is total current expense costs for a planning unit; ISTCST (17,2,K) is total planning unit costs (current expense plus capital outlay); ISTCST(17,3,K) is total local planning unit costs (total planning unit costs minus planning unit non-current expense revenues.)
ISUBP(I)	Codes of planning units in a program with the status code of 'SUBP' (sub-program). Subscript I ranges over planning unit codes.
IWORK(I)	Temporary variable used to store CY and Y1-Y5 NSNCO cost for a NSNCO cost type. Subscript I ranges over years.
IWORK1(I)	Temporary variable use to store the codes of staff types in a planning unit. Subscript I ranges over staff types.
I1	Plan type. The plan types are: BASE represents a base case computer run and ALTE represents an alternative case computer run.
I1S	Alternative case number of the previous alternative case.
I2	Playback option.
I3	Computer run option.
I8	Numeric code of an alternative case.

I9(I)	Temporary variable used to store CC 9-80 of an alternative case specification card. Subscript I ranges over the characters necessary to store the data in the data card. Subscript I=1,5 is the title of the alternative plan. Subscript I=6 is the plan type. Subscript I=7,15 represents the project codes of those projects in the particular alternative case.
KALTC	Count of the number of alternative cases for which case specification cards are input in a particular computer run.
MNC(I)	Staff types. Subscript I ranges over the staff type.
MNT	Staff type code.
MNTITL(I,J)	Staff codes and titles. Subscript I ranges over the manpower type titles. Subscript J ranges over the characters necessary to store a staff code and a staff title. Subscript J=1 represents the staff code. Subscript J=2 to J=8 represent the characters necessary to store the staff title.
N	Total number of input cards consisting of permanent data cards, planning unit data cards, and data header and trailer cards (count of cards on temporary data set 1).
NALC	Number of alternative cases to be calculated in any one computer run.
NCERV(I)	Non-current expense revenues for a planning unit. Subscript I ranges over years.

NDMNPC	Number of district-wide staff data cards.
NMNTYP	Total number of staff types in a planning unit.
NNSCO	Total number of non-staff non-capital cost types for which NNSCO data will be input for a planning unit.
NNSIDF	Total number of district-wide non-staff non-capital outlay cost types.
NPENR	Number of planning unit enrollment base data cards. (Card type number 11)
NPDE	Number of planning units in a program with a status code of project design.
NPFOR(I)	Forecast option code for calculating staff costs for a planning unit. Subscript I ranges over staff types.
NPJIP	Number of projects in an alternative case.
NPMNP	Number of planning unit staff information cards. (Card type number 16.)
NPNCE	Number of planning unit non-current expense revenue cards (card type number 12.)
NPNSC	Number of planning unit non-staff non-capital outlay cost cards (card type number 13.)
NPNSD	Number of planning unit non-staff non-capital outlay cost information cards.
NPRJ	Number of planning units in a program with a status code of project (status code is 'PROJ'.)

NPRJCD	Number of project title cards.
NPROGC	Number of program title cards.
NPU	Number of planning unit title cards.
NPUCO	Number of planning unit capital outlay cost cards (card type number 13.)
NPUDS	Number of planning unit descriptor cards (card type number 10.)
NPUSF	Number of planning unit staff type data cards (card type number 17.)
NSC(I,J)	Non-staff non-capital outlay costs for a planning unit. Subscript I ranges over the NSNCO cost types. Subscript I=5 represents the total NSNCO cost for a planning unit. Subscript J ranges over the following: NSC(I,1) = Forecast option code for NSNCO cost type I; NSC(I,2) = CY NSNCO cost for NSNCO cost type I; NSC(I,3) = Y1 NSNCO cost for NSNCO cost type I; NSC(I,4) = Y2 NSNCO cost for NSNCO cost type I, and so on.
NSCSTY	NSNCO cost type for a planning unit.
NSFOPC	NSNCO forecast option code.
NSINF(I)	Non-staff non-capital outlay inflation rates for the current year. Subscript I ranges over NSNCO cost types.
NSITEC	Number of site title cards.
NSTACD	Number of staff title cards.

NSTTYP(J)	Variable used to indicate staff types in a program. Subscript J ranges over staff types.
NSUBP	Number of planning units in a program with a status code of subprogram.
OCI	Card identifier of previous planning unit record.
OCN	Card number of previous planning unit record.
ODT	Date of previous planning unit record.
OPUC	Planning unit code of previous planning unit record.
PCOF	Forecast calculation option code for the capital outlay costs of a planning unit as follows: 01 = input CY and Y1-Y5 capital outlay costs; 02 = input CY capital outlay costs only; and, 03 = input CY capital outlay costs only.
PHDR	Variable to store the card type 'PHDR' as a literal. This card type indicates a permanent data input header card.
PJCIP(I)	Codes of projects in an alternative case. Subscript I ranges over projects in the alternative case.
PJDE	Variable used to store the literal 'PJDE' which denotes the status code of a planning unit as a project design.

PJTITL(I,J)	Project codes and titles. Subscript I ranges over the project titles. Subscript J ranges over the characters necessary to store a project code and a project title. Subscript J=1 represents the project code, and Subscript J=2 to J=8 represents the project title.
PLNCDE	Numeric code of an alternative plan.
PLNTLE(I)	Alternative case title. Subscript I ranges over the characters necessary to store the alternative case title.
PLNTYP	Variable used to store literal which indicates if all projects are used in an alternative plan, or if only specific projects are to be used in an alternative plan (as input via the case specification card.)
PNP(I,J)	Number of positions by staff type for a planning unit. Subscript I ranges over staff types. Subscript J ranges over years. Subscript J=14 represents the total number of positions in a planning unit.
PROJ	Variable used to store the literal 'PROJ' which denotes that the status code for a planning unit is designated as project.
PTITLE(I,J)	Program codes and titles. Subscript I ranges over the program titles. Subscript J ranges over the characters necessary to store a program code and a program title. Subscript J=1 represents the program code, and Subscript J=2 to J=8 represents the program title.

PUC	Planning unit code.
PUN(I)	Planning unit name. Subscript I ranges over the characters necessary to store the name.
PUPJ	Project code for a planning unit.
PUPR	Program membership code for a planning unit.
PUS	Site code for a planning unit.
PUST	Status code for a planning unit as follows: SUBP represents a subprogram, PRJO represents an existing project, and PJDE represents a project design.
PUTITL(I,J)	Planning unit codes and titles. Subscript I ranges over the planning units. Subscript J ranges over the characters necessary to store a planning unit code and a planning unit name. Subscript J=1 represents the planning unit code, and J=2 to J=8 represents the characters in the planning unit title.
PWORK(I)	Temporary variable used to store number of positions of a staff type. Subscript I ranges over years.
RTITLE(I)	Title of the computer run. Subscript I ranges over the characters necessary to store the run title.
SSR(I)	Staff-student ratio. Subscript I ranges over staff types.
STITLE(I,J)	Site codes and titles. Subscript I ranges over the sites. Subscript J ranges over the characters necessary to store a site code and a site title. Subscript J=1 represents the site code, and J=2 to J=8 represents the characters in the site title.

SUBP	Variable used to store the literal 'SUBP' which denotes that the status code for a planning unit is designated as a subprogram.
T1(I)	Temporary variable used as a work area for storing data input. Subscript I ranges over the characters necessary to store the data input.
T2	CC 79-80 of card input stored on data set 1.
T3(I)	Header card title. Subscript I ranges over the characters necessary to store the header title.
VAR	Variable used to store the literal 'VAR', signifying that only playback reports for planning unit input data are to be printed.

REPORT DESCRIPTIONS

Introduction

The Resource Requirements Module computer program produce reports which can be grouped under the following three classifications:

- detail cost reports for each planning unit, for each program, and for each site
- summary cost reports for each program, for each site, and for each project
- and district summary report of costs by cost category (Staff, Capital Outlay, and Non-Staff Non-Capital Outlay Costs), and manpower requirements

Each of these reports is discussed in the paragraphs which follow. All sample reports are illustrative only.

PLANNING UNIT DETAIL REPORT

A Planning Unit Detail Report is produced for each planning unit included in the computer run.

Descriptive information about the planning unit, such as name, code, site name, program membership name, and status, were input and are displayed in the first part of the report.

Cost data is presented in the main section of the output. First, the CY and Y1-Y5 Salary Costs, Staff Costs (includes fringe benefits), and number of positions are calculated and displayed by staff type. The Cost Forecast Option Code is displayed beside each staff type to indicate the calculation method used for estimating Y1-Y5 data. Second, Non-Staff Non-Capital Outlay Costs (NSNCO) for the CY and Y1-Y5 and its cost forecast option code are shown. Total Current Expense Costs for Y1-Y5 are calculated as the sum of Staff and NSNCO costs. CY and Y1-Y5 Capital Outlay costs are determined, and both the cost forecast option for this cost detail line and CO costs are presented. CY and Y1-Y5 Total Planning Unit Cost is calculated as the sum of Total Current Expense Costs plus Capital Outlay Costs for the CY and Y1-Y5.

Total CY and Y1-Y5 Non-Current Expense Revenues were input. Total Local Cost for the CY and Y1-Y5 is calculated as Total Non-Current Expense Revenue from Total Planning Unit Costs.

Subsidiary data used in the cost calculations are printed. The CY and [illegible] enrollment base of the planning unit was input. The number of positions by staff type for the current year and the total salary cost by staff type for the current year were input. Current year mean salary by staff type by planning unit is calculated as total salary by staff type divided by the total number of positions by staff type. The staff-student ratio for the current year by staff type equals the current year enrollment divided by the current year number of positions by staff type. Staff-student ratio is only calculated when the forecast option code is 3.

Refer to the cost calculation section above for a detailed discussion of the cost forecast option codes and the cost calculations.

PROGRAM DETAIL REPORT

A Program Unit Detail Report is automatically produced for each program during a computer run of the program cost model.

CY staff data by planning unit - number of positions, salary cost, and staff cost, each by staff type - was input. Y1-Y5 planning unit staff data was then calculated (Refer to Table III.3-a for details). Previously input by planning unit were CY Capital Outlay and OENCS, and CY and Y1-Y5 Non-current expense revenues. Y1-Y5 CS and OENCS by planning unit were calculated. The program membership code for each planning unit was also input.

The number of staff positions and staff costs by staff type by program for the CY and Y1-Y5 is calculated by aggregating planning unit staff data by program by selecting the appropriate planning unit based upon the program membership code of the planning unit. CY and Y1-Y5 Staff totals for a program are calculated by aggregating these data across staff types in the program.

OENCS by program for the CY and Y1-Y5 is calculated in the same way, i.e., by aggregating across planning units the CY and Y1-Y5 planning unit OENCS costs by program based upon the program membership. The same process is repeated for aggregating CY and Y1-Y5 Capital Outlay and CY and Y1-Y5 Non-Current Expense Revenues by program.

Total Current Expense Cost for a program equals Staff Cost for the program plus HSRED cost for the program for CY and Y1-Y5. The Total Gross Cost of a Program is calculated as the sum of CY and Y1-Y5 Total Current Expense Cost for the program and CY and Y1-Y5 Capital Outlay for the program. CY and Y1-Y5 Total Local Cost of a Program equals CY and Y1-Y5 Total Gross Cost of the Program minus CY and Y1-Y5 Non-Current Expense Revenues of the program.

The names of the planning units included in the program detail report are displayed by status identifier - subprogram, project, project design - under subsidiary data.

```
                                        TRENTON SCHOOL DISTRICT                                   REPORT NO. TSD-RRM-3030
                                        PROGRAM DETAIL REPORT                                     PAGE    3

PROGRAM TITLE:  PRIMARY                        PROGRAM CODE:   63

CURRENT EXPENSE                                    CY          Y1          Y2          Y3          Y4          Y5
  STAFF POSITIONS AND COSTS BY STAFF TYPE

 .    TEACHERS-PRIMARY

        NUMBER OF POSITIONS                      24.2        29.6        39.9        50.2        60.5        80.8
        SALARY COST                            196000      255615      368111      495103      638070      910830
        FRINGE BENEFIT COST                     17640       23005       33130       44559       57426       81974
        STAFF COST                             213640      278620      401241      539662      695496      992804

 .    ADMINISTRATION-PRINCIPAL

        NUMBER OF POSITIONS                       1.0         1.3         2.0         2.7         3.3         4.7
        SALARY COST                             20000       27733       43264       59993       77990      113554
        FRINGE BENEFIT COST                      1800        2496        3894        5399        7019       10220
        STAFF COST                              21800       30229       47158       65392       85009      123774

      STAFF TOTALS FOR THE PROGRAM

        NUMBER OF POSITIONS                      25.2        30.9        41.9        52.9        63.8        85.5
        SALARY COST                            216000      283348      411375      555096      716060     1024384
        FRINGE BENEFIT COST                     19440       25501       37024       49958       64445       92194
        STAFF COST                             235440      308849      448399      605054      780505     1116578

  TOTAL NSRCO COST                              21000       24180       26556       32164       38063       43347

TOTAL CURRENT EXPENSE                          256440      333029      474955      637218      818568     1159925
-----------------------------------------------------------------------------------------------------------------------

CAPITAL OUTLAY COST                               700         735         811         939        1141        1456

GROSS PROGRAM COST(CE+CO)                      257140      333764      475766      638157      819709     1161381

TOTAL NON-CURRENT EXPENSE REVENUE               50000       50000       50000       50000       50000       50000

TOTAL LOCAL PROGRAM COST                       207140      283764      425766      588157      769709     1111381
-----------------------------------------------------------------------------------------------------------------------
                                        SUBSIDIARY DATA

PLANNING UNITS IN THE PROGRAM BY STATUS CODE

     SUBPROGRAM STATUS CODE
          5030     ROBBINS-ELEMENTARY PLG UNIT

     PROJECT STATUS CODE
          4371     ANNEX-READING ACH ESEA TI

     PROJECT DESIGN STATUS CODE
          NONE
```

Summary Report By Program

CY and Y1-Y5 Current Expense Cost, Capital Outlay, Total Gross Cost, Total Non-Current Expense Revenues, and Net Local Program Costs, all by program, were previously calculated and are displayed in this summary report.

```
BASE CASE PROGRAM RUN-10/1/71          TRENTON SCHOOL DISTRICT                            REPORT NO. TSD-RRM-3031
                                        PROGRAM SUMMARY REPORT                             PAGE    5

PROGRAM                                   CY          Y1          Y2          Y3          Y4          Y5

   EARLY CHILDHOOD

      TOTAL CURRENT EXPENSE             35520       41774       43919       46349       49117       57871
      CAPITAL OUTLAY COST                1000        1500        1500        1500        3000           0
      GROSS COST OF PROGRAM             36520       43274       45419       47849       52117       57871
      NON-CURRENT EXPENSE REVENUES          0           0           0           0           0           0

      NET(LOCAL) PROGRAM COST           36520       43274       45419       47849       52117       57871


   ELEMENTARY

      TOTAL CURRENT EXPENSE             99816      106404      113771      130181      142678      157530
      CAPITAL OUTLAY COST                5000        5250        5788        6700        8144       10394
      GROSS COST OF PROGRAM            104816      111654      119559      136881      150822      167924
      NON-CURRENT EXPENSE REVENUES          0           0           0           0           0           0

      NET(LOCAL) PROGRAM COST          104816      111654      119559      136881      150822      167924


   PRIMARY

      TOTAL CURRENT EXPENSE            256440      333029      474955      637218      818568     1159925
      CAPITAL OUTLAY COST                 700         735         811         939        1141        1456
      GROSS COST OF PROGRAM            257140      333764      475766      638157      819709     1161381
      NON-CURRENT EXPENSE REVENUES      50000       50000       50000       50000       50000       50000

      NET(LOCAL) PROGRAM COST          207140      283764      425766      588157      769709     1111381


   SUPPORT SERVICES

      TOTAL CURRENT EXPENSE                 0           0           0           0           0           0
      CAPITAL OUTLAY COST                   0           0           0           0           0           0
      GROSS COST OF PROGRAM                 0           0           0           0           0           0
      NON-CURRENT EXPENSE REVENUES          0           0           0           0           0           0

      NET(LOCAL) PROGRAM COST               0           0           0           0           0           0
```

SITE DETAIL REPORT

A SITE DETAIL REPORT for a site is produced during the computer run of the site cost model. A site report is produced for each site included in a case.

CY Staff Data by planning unit, CY Capital Outlay by planning unit, and CY NSNCO by planning unit were previously input, as were CY and Y1-Y5 Non-Current Expense Revenues by planning unit. Y1-Y5 costs by planning unit for each of the above cost categories was previously calculated. The site membership code for each planning unit was also input.

Planning unit staff, CO, and NSNCO costs and Non-Current Expense Revenues for CY and Y1-Y5 are summed by site code across all appropriate planning units which were selected based upon the site membership code and the SITE SPECIFICATION card data input.

Total Current Expense Cost for a site equals Staff Cost for the site plus NSNCO cost for the site for CY and Y1-Y5. The Total Site Cost of a Site is equal to the sum of CY and Y1-Y5 Total Current Expense Cost for the Site and CY and Y1-Y5 Capital Outlay for the Site. Total CY and Y1-Y5 Local Site Cost is calculated as CY and Y1-Y5 Total Non-Current Expense Revenues from CY and Y1-Y5 Total Site Cost.

The names of the planning units included in the site report are displayed.

```
                                   TRENTON SCHOOL DISTRICT                         REPORT NO. TSD-RRM-3000
                                     SITE DETAIL REPORT                            PAGE    1

 SITE TITLE:  ROBBINS SCHOOL                SITE CODE:   14

CURRENT EXPENSE                                  CY         Y1         Y2         Y3         Y4         Y5
  STAFF POSITIONS AND COSTS BY STAFF TYPE

    TEACHERS-EARLY CHILDHOOD

       NUMBER OF POSITIONS                      3.5        4.0        4.0        4.0        4.0        4.5
       SALARY COST                            28000      33600      35280      37044      38896      45946
       FRINGE BENEFIT COST                     2520       3024       3175       3334       3501       4135
       STAFF COST                             30520      36624      38455      40378      42397      50081

    TEACHERS-PRIMARY

       NUMBER OF POSITIONS                      9.2        9.6        9.9       10.2       10.5       10.8
       SALARY COST                            76000      84415      93335     103090     113753     125404
       FRINGE BENEFIT COST                     6840       7597       8400       9278      10238      11286
       STAFF COST                             82840      92012     101735     112368     123991     136690

    TEACHERS-ELEMENTARY

       NUMBER OF POSITIONS                     10.3       10.3       10.5       11.1       11.4       11.8
       SALARY COST                            82400      88168      94340     108784     119544     132400
       FRINGE BENEFIT COST                     7416       7935       8491       9790      10759      11916
       STAFF COST                             89816      96103     102831     118574     130303     144316

    STAFF TOTALS FOR THE SITE

       NUMBER OF POSITIONS                     23.0       23.9       24.2       25.3       25.9       27.1
       SALARY COST                           186400     206183     222955     248918     272193     303750
       FRINGE BENEFIT COST                    16776      18556      20066      22402      24498      27337
       STAFF COST                            203176     224739     243021     271320     296691     331087

  TOTAL NONSTAFF COST                         30000      33451      36404      42578      49095      55004

TOTAL CURRENT EXPENSE                        233176     258190     279425     313898     345786     386091
------------------------------------------------------------------------------------------------------------

CAPITAL OUTLAY COST                            2500       7275       7867       8870      11958      11433

GROSS   SITE   COST(CE+CO)                   235676     265465     287292     322768     357744     397524

TOTAL NON-CURRENT EXPENSE REVENUE                 0          0          0          0          0          0

TOTAL LOCAL   SITE   COST                    235676     265465     287292     322768     357744     397524
------------------------------------------------------------------------------------------------------------
                                         SUBSIDIARY DATA

PLANNING UNITS AT THE   SITE  BY STATUS CODE

     SUBPROGRAM STATUS CODE
          1108     ROBBINS-EARLY CHILDHOOD PU
           850     ROBBINS-PRIMARY PLG UNIT
          5038     ROBBINS-ELEMENTARY PLG UNIT

     PROJECT STATUS CODE
          NONE
```

PROJECT DETAIL REPORT

A Project Detail Report for a project is produced during the computer run of the project cost model. A project report is produced for each project included in a case, as appropriate.

CY Staff Data by planning unit, CY Capital Outlay for planning unit, and CY NSNCO by planning unit were previously input, as were CY and Y1-Y5 Non-Current Expense Revenues by planning unit. Y1-Y5 costs by planning unit for each of the above cost categories was previously calculated. The project membership code for each planning unit was also input.

Planning unit staff, CO, and NSNCO costs and Non-Current Expense Revenues for CY and Y1-Y5 are summed by project code across all appropriate planning units which were selected based upon the project membership code and the CASE SPECIFICATION card data input.

Total Current Expense Cost for a project equals Staff Cost for the project plus NSNCO cost for the project for CY and Y1-Y5. The Total Project Cost is equal to the sum of CY and Y1-Y5 Total Current Cost for the Project and CY and Y1-Y5 Capital Outlay for the Project. Total CY and Y1-Y5 Local Project Cost is calculated as CY and Y1-Y5 Total Non-Current Expense Revenues from CY and Y1-Y5 Total Project Cost.

The names of the planning units included in the project report are displayed.

```
BASE CASE:  Run I - Oct. 9, 1972                    Report No. TSD-RRM xxxx

                         TRENTON SCHOOL DISTRICT
                          DETAIL PROJECT COSTS

 PROJECT NAME:                              CY   Y1   Y2   Y3   Y4   Y5

 Current Expense:

  Staff Positions and Staff Costs

    Teachers - Early Childhood
                        Positions
                        Salary Cost
                        Staff Cost

    Teachers - Primary
                        Positions
                        Salary Cost
                        Staff Cost

    Teachers - Elementary
                        Positions
                        Salary Cost
                        Staff Cost

    Principals
                        Positions
                        Salary Cost
                        Staff Cost

    Instructional Specialists
                        Positions
                        Salary Cost
                        Staff Cost

    Clerical
                        Positions
                        Salary Cost
                        Staff Cost

    Staff Totals
                        Positions
                        Salary Cost
                        Staff Cost

  NON-STAFF NON-CAPITAL OUTLAY COST
  TOTAL CURRENT EXPENSE
--------------------------------------------------------------------------
  CAPITAL OUTLAY
TOTAL SITE COST
TOTAL NON-CURRENT EXPENSE REVENUES
TOTAL LOCAL SITE COST
--------------------------------------------------------------------------
PLANNING UNIT TO SITE NAME LIST
```

DISTRICT RESOURCE REQUIREMENTS SUMMARY REPORT

CY cost data by planning unit was previously input, and Y1-Y5 costs - Salary, Staff, NSNCO, CO, Total Planning Unit, and Local Planning Unit - by planning unit were calculated. CY and Y1-Y5 Non-Current Expense Revenues by planning unit were input.

CY and Y1-Y5 cost data is summed across all planning units for each type of planning unit cost and position types to determine Total Number of Positions, Total Salary Cost, Total Staff Cost, Total NSNCO, and Total CO for the district. CY and Y1-Y5 Staff Fringe Benefits is equal to CY and Y1-Y5 Total Staff Cost minus CY and Y1-Y5 Total Salary Cost. Total Current Expense Cost for CY and Y1-Y5 equals Staff Cost plus NSNCO for CY, Y1-Y5.

Total Gross Cost for the CY and Y1-Y5 is calculated as the sum of CY and Y1-Y5 Total Current Expense plus Capital Outlay. Total Local Cost for CY and Y1-Y5 equals CY and Y1-Y5 Total Gross Cost minus CY and Y1-Y5 Total Non-Current Expense Revenue.

Inflation rates for NSNCO cost by cost type and capital outlay were previously input. Expected Turnover Rate by Staff Type, Salary Inflation Percent by Staff Type, and Fringe Benefit Percent by Staff Type were previously input.

```
    BASE CASE PROGRAM RUN-10/1/71          TRENTON SCHOOL DISTRICT                      REPORT NO. TSD-RRM-30.32
                                       RESOURCE REQUIREMENTS SUMMARY REPORT                   PAGE   6

CURRENT EXPENSE                                 CY          Y1          Y2          Y3          Y4          Y5
  STAFF COSTS
         SALARY COST                        326400      405116      540995      700924      874500     1202730
         FRINGE BENEFIT COST                 29376       36460       48690       63082       78705      108245
         STAFF COST                         355776      441576      589685      764006      953205     1310975

  TOTAL NSHCO COSTS                          36000       39631       42960       49742       57158       64351

TOTAL CURRENT EXPENSE                       391776      481207      632645      813748     1010363     1375326

CAPITAL-OUTLAY COST                           6700        7485        8099        9139       12285       11850

TOTAL GROSS COST(CE+CO)                     398476      488692      640744      822887     1022648     1387176

TOTAL NON-CURRENT EXPENSE REVENUES           50000       50000       50000       50000       50000       50000

TOTAL NET(LOCAL) COST(GROSS-NCE REV)        348476      438692      590744      772887      972648     1337176
----------------------------------------------------------------------------------------------------------
                                                  SUBSIDIARY DATA

INFLATION RATE FOR NSHCO COST TYPE 1 TO 4      0.03    0.03    0.03    0.03

INFLATION RATE FOR CAPITAL OUTLAY COST         0.05

                                        EXPECTED         SALARY COST        FRINGE
                                        TURNOVER         INFLATION          BENEFIT
                                        RATE               PERCENT(CY)        PERCENT
  TEACHERS-EARLY CHILDHOOD                0.20               0.05             0.09
  TEACHERS-PRIMARY                        0.15               0.07             0.09
  TEACHERS-ELEMENTARY                     0.12               0.07             0.09
  ADMINISTRATION-PRINCIPAL                0.02               0.04             0.05
```

MANPOWER REPORT

CY number of positions (P) by staff type by planning unit are input. Y1-Y5 number of positions by staff type by planning unit are calculated. Refer to Table III.3-a for the calculation detail procedures.

The number of positions by staff type for the CY and Y1-Y5 is summed by staff type across all planning units to determine the total number of positions by staff type for the district as a whole.

The turnover rate by staff type was previously input. Hires by staff type occurs because of staff separations or turnover. Y1-Y5 hires by staff type equals the number of positions by staff type multiplied by the turnover rate by staff type.

```
BASE CASE PROGRAM RUN-10/1/71          TRENTON SCHOOL DISTRICT                            REPORT NO. TSD-RRM-3033
                                        DISTRICT MANPOWER REPORT                            PAGE    7
                                          FOR THE BASE CASE

STAFF TYPE                                      CY           Y1           Y2           Y3           Y4           Y5

  TEACHERS-EARLY CHILDHOOD      POSITIONS      3.5          4.0          4.0          4.0          4.0          4.5
    TURNOVER RATE    0.20       HIRES                       1.2          0.8          0.8          0.8          1.3

  TEACHERS-PRIMARY              POSITIONS     24.2         29.6         39.9         50.2         60.5         80.8
    TURNOVER RATE    0.15       HIRES                       9.0         14.8         16.3         17.8         29.4

  TEACHERS-ELEMENTARY           POSITIONS     10.3         10.3         10.3         11.1         11.4         11.8
    TURNOVER RATE    0.12       HIRES                       1.2          1.2          2.0          1.6          1.8

  ADMINISTRATION-PRINCIPAL      POSITIONS      1.0          1.3          2.0          2.7          3.3          4.7
    TURNOVER RATE    0.02       HIRES                       0.4          0.7          0.7          0.7          1.4
```

SYSTEM FOR TRENTON's EDUCATIONAL PLANNING

REVENUE MODULE

USERS MANUAL

INTRODUCTION

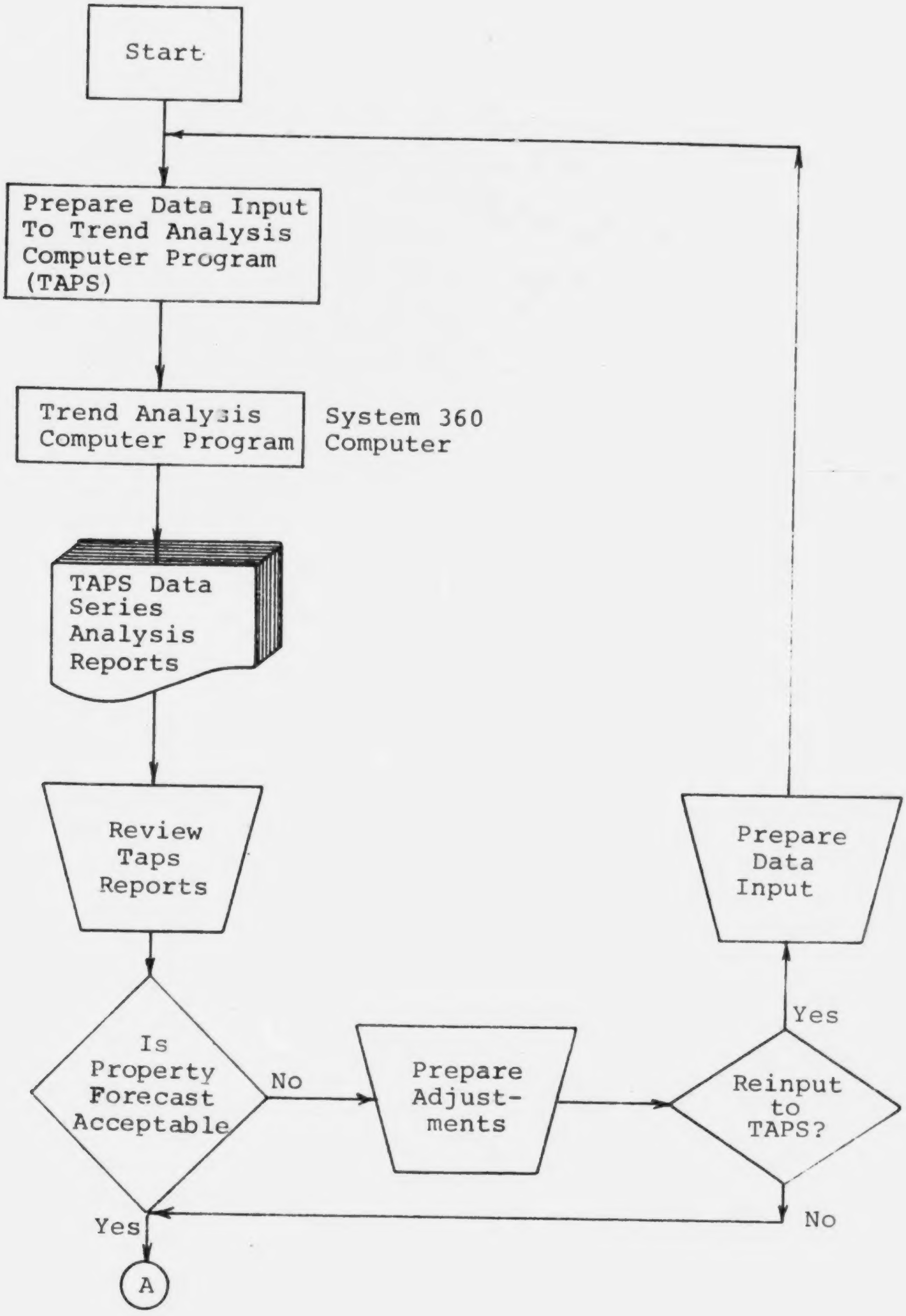
GENERAL

The Users Manual for the Revenue Module of the System for Trenton's Educational Planning (STEP) details the instructions for data estimation and preparation of the data input cards for the computer simulation of projected revenues.

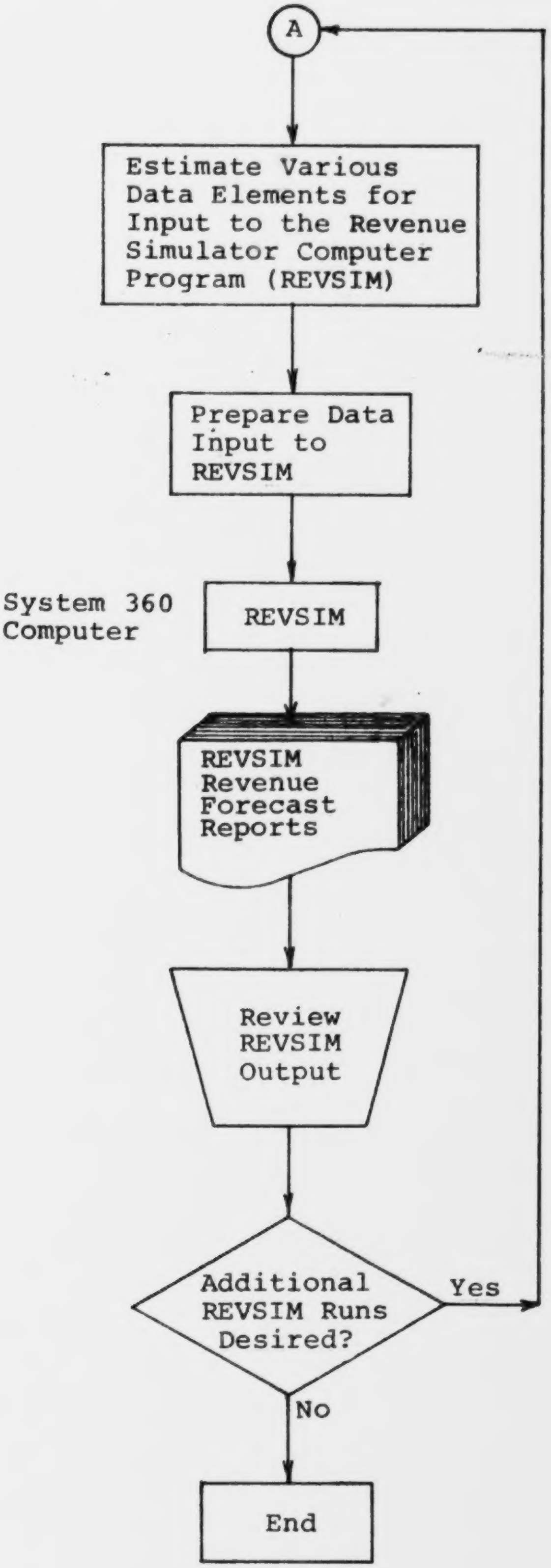
The Revenue Module consists of a combination of automated and manual processing stages. The automated phase consists of running two computer programs, the Trend Analysis (TAPS) computer program and the Revenue Simulator (REVSIM) computer program, at different points in the system flow. The manual phase of the module can be generally defined under the areas of data collection, reviewing data (both historical and projected) for possible adjustment, estimating the values of data elements used in the system, the preparation of input card decks, and the establishment and maintenance of various hard copy files (for the preservation of information used in revenue estimation). Chart III. 4-1 is a flowchart of the overall steps involved in the Revenue Module.

COMPUTER PROGRAM DEFINITION

The TAPS computer program, on the basis of historical data, projects the values of a data series into the future, calculates an upper and lower limit for each future value, Chart III.4-1 FLOWCHART OF REVENUE MODULE PROCEDURAL STEPS.



Start
Prepare Data Input To Trend Analysis Computer Program (TAPS)
Trend Analysis Computer Program
System 360 Computer
TAPS Data Series Analysis Reports
Review Taps Reports
Is Property Forecast Acceptable
No
Yes
Prepare Adjustments
Reinput to TAPS?
Yes
No
Prepare Data Input
A


A
Estimate Various Data Elements for Input to the Revenue Simulator Computer Program (REVSIM)
Prepare Data Input to REVSIM
System 360 Computer
REVSIM
REVSIM Revenue Forecast Reports
Review REVSIM Output
Additional REVSIM Runs Desired?
Yes
No
End

and tests the statistical significance of the trend. For each revenue source identified by district planners, the REVSIM computer program projects future revenues for each source for each year of a five year planning period, using various classes of data to be described below, and tests the revenue feasibility of a district program based upon the availability of Y1-Y5 expected revenues to cover Y1-Y5 expected costs.

REVENUE SOURCES

A study of district income sources reported in the district's annual budget and discussion with district personnel, provided the basis for identifying major revenue sources. The revenue classification schema used in REVSIM is to estimate funds by revenue type for each major revenue source. The district's three major revenue sources are: local, State, and Federal. In Table III.4-a, current expense revenue items from which district income is derived, are identified according to source - local, State, or Federal. Revenues from State and Federal sources are further classified in REVSIM into current expense revenues and non-current expense or categorical revenues. Current expense revenues are those funds used to finance the day to day operating (current expense) costs of the district, while categorical funds are used to pay for special projects and programs and not considered part of the regular school program. Revenues from local sources are assumed to be current expense revenues.

Table III.4-a Revenue by Source for the Trenton School District, 1966-67 through 1971-72

	Actual 1966-67	Actual 1967-68	Actual 1968-69	Actual 1969-70	Actual 1970-71	Budget 1971-72
State:						
Formula Aid	3751008	3818043	3714140	3605969	3534889	5256383
Transportation	21665	28900	133880	163360	202825	239375
Atypical Pupil	217993	231222	410330	511367	542092	618032
Emergency Aid	25000	----	----	----	----	----
Foreign Born	2877	3493	5000	5000	5000	5000
Evening Vocational	10000	10000	1000	15138	----	----
Vocational Day	----	----	20160	22535	60000	50000
Adult Education	17533	9800	10600	11000	12000	12000
Dept. of Transportation	----	10709	5133	5413	----	----
Chapter 301 PL 1968	----	----	----	426300	423875	----
Demonstration School	30450	37800	64500	----	----	----
Law Enforcement	----	----	22351	100204	84000	85000
Building Aid	190354	106289	55565	87937	86601	114611
Total-State Aid	4266880	4256256	4451659	4954223	4951282	6380401
Federal:						
Evening Vocational	23610	23481	14901	8755	----	----
Vocational Day	20585	36172	16610	74741	60000	50000
NDEA III & V	17791	28775	8977	11527	5000	----
P.L. 874	----	57479	42531	91121	87084	----
Total-Federal	61986	145907	83019	186144	152084	50000
Local:						
Tuition	118105	48685	54671	59638	65000	70000
Other	63232	30830	36948	53320	39400	46800
Surplus Appropriated	145000	145000	128000	44566	214106	----
Total-Misc.	326337	224515	219619	157524	318506	116800

Total Current Expenses	11008846	11941563	13248781	15284680	16547009	18244587
Total Funds (State, Federal, Local)	4655203	4726678	4754297	5297891	5421422	6547201
City Appropriation	6353643	7214885	8494484	9986789	11125137	11696886

Source: (1) Income Data for 1966-67 through from Business Department, Trenton School District, March, 1971.

(2) Income Data for 1971-72 from Trenton School District Budget Document, 1971-72.

Comment: (1) Starred (*) revenue sources have been discontinued.

(2) Formula Aid amount for the 1971-1972 Budget includes Bateman and Chapter 301 PL 1968 allocations.

The REVSIM computer program therefore simulates Y1-Y5 revenues by major source by current expense/non-current expense category. Table III.4-b lists the output reports of REVISM.

DATA REQUIREMENTS OF REVENUE MODULE

The data elements input to the REVENUE MODULE computer programs to simulate Y1-Y5 expected revenues can be grouped into three categories: initial conditions, parametric values, and predictions of uncontrollable factors. Data elements in the first category are those which indicate actual conditions during past years. The second grouping is composed of data elements estimated by the user for use in aid formulae. These data can vary by year at the discretion of the user or can be set at a constant level over the planning period, (for example, the user can use current year levels) but which have a definite impact on the calculated results of the formulae. The data elements in the final group include those items which must be projected into the future. Table III.4-c lists the data elements by classification.

PURPOSE OF REVENUE MODULE

The REVENUE MODULE is not intended to provide exact annual amounts of expected funds, but rather to give some tentative statements made under assumed conditions with regard to the revenue implications of educational decisions. Furthermore, the procedures involved require the systematic identification

Table III.4-b

Output Reports Generated by REVENUE SIMULATOR Program

1. Y1-Y5 Real Estate Tax Revenues At CY Rate
2. Y1-Y5 Special Education Aid Forecast
3. Y1-Y5 Transportation Aid Forecast
4. Y1-Y5 Formula Aid Forecast
5. Y1-Y5 Equalized Tax Rate for Computing Incentive-Equalization Aid
6. Y1-Y5 Incentive- Equalization Aid Forecast
7. Y1-Y5 Total Revenues from Local Sources
8. Y1-Y5 Total Revenues, Current Expense Revenues, and Categorical Revenues from Federal Sources Forecast
9. Y1-Y5 Enrollment Forecast
10. Y1-Y5 Total Revenues, Current Expense Revenues, and Categorical Revenues from State Sources Forecast
11. Y1-Y5 Total Revenue (Summary) Forecast
12. Y1-Y5 Revenue Feasibility (Current Expense)
13. Y1-Y5 Revenue Feasibility (Non-Current Expense)

Table III.4-c

REVENUE MODULE DATA INPUTS BY CLASSIFICATION TYPE

A. INITIAL CONDITIONS

1. Market value of property in the district by property type for the last five years
2. Number of years of consecutive past data available and number of years to be forecast
3. Special Education Program Costs for CY-1 and CY
4. Transportation Program Costs for CY
5. Resident Enrollment for CY by student weight categories and total
6. Student weight categories and corresponding weights
7. CY actual revenue surplus, if any (if deficit, surplus is 0.0)
8. District classification assumption (determines guaranteed valuation per weighted pupil and minimum support rate per weighted pupil used in Incentive-Equalization Aid calculations for TPS)
9. CY real estate tax rate (for school purposes)
10. CY assessment ratio
11. CY collection percent

B. PARAMETRIC VALUES

1. State policy rates and factors
    a. Reimbursement percent for Special Education and Transportation Program costs
    b. CY foundation rate per resident pupil
    c. CY millage rate
    d. CY minimum aid rate per resident pupil
    e. CY CH301 aid rate per resident pupil
    f. Guaranteed Valuation per weighted pupil

g. Minimum Support aid rate per weighted pupil

h. Incentive-Equalization Aid payment percent

C. PREDICTION OF UNCONTROLLABLE FACTORS USED IN REVENUE FORECASTER (for Y1-Y5)

1. Market value of real property by property type
2. Enrollment forecast by student weight category and total by year
3. Transportation program costs
4. Special Education program costs
5. Current expense local revenues (estimate subjectively based upon past data or use straight-line trend of past data)
6. Current expense federal revenues (estimate subjectively-forecast Y1-Y5 input factors and input to formula calculation)
7. Categorical federal revenues (estimate subjectively x federal source - applicable law, federal agency, and year)
8. Other current expense State revenues (excluding Incentive-Equalization Aid, Transportation Aid and Special Education Aid). Estimate subjectively based upon past data or use straight line trend of past data
9. Categorical State revenues (estimate subjectively x state source - applicable law, state agency, and year)
10. Current expense and categorical program costs
11. Estimates of the assessment ratio , collection percent, and various state policy rates

of sources and Y1-Y5 estimation plus explicit notation of all assumptions regarding the revenue estimates. Therefore as the revenue module is used annually, and a body of data is collected and analyzed over the years, a better understanding of revenue behavior and more accurate estimates will result.

In the case of STEP, revenue forecasting performs a vital function in the system. Besides clarifying the changes in population and economic status within a community, facilitating continuing budget decisions, and assisting in the evaluation of the results of past decisions, revenue projections yield a more accurate configuration of revenue and expenditure balances for future dates, and document the use of new and old revenue sources.

PRESENTATION OF THE USERS PROCEDURES

The Revenue Forecasting Procedures are presented as follows:

- General instructions for recording data and preparing input cards.
- Data Estimation and Data Input Procedures for the Trend Analysis Program and the Revenue Simulator Program, respectively - instructions for the collection and estimation of data elements input to the respective programs, and the preparation of data input (in appropriate format) to these programs.

- Computer Program Documentation for each computer program - provides flowcharts of each computer program, program listings, variable dictionaries, and examples of printouts from each computer program.

INPUT CARD TYPES-PURPOSES AND FORMAT

General Description of Input Card Format

The data deck for input to TAPS consists of a set of 80 column keypunch cards of two different types, while the REVSIM input data deck consists of 35 different card types.

In general, a data input card is formatted as follows: cc 1-2, a card type field; cc 3-4 base case or alternative case identifier field, cc 5-8 an English language abbreviation of the data element for identification purposes; and, cc 9-80 the fields for entering data element values. The card type code is a unique two-character numeric code which has been assigned to every data element inputted to the system. However, several data elements require a set of input cards of the same type, in which case only the one card type code is used. For example, card type code 15 is assigned to each input card for recording Y1-Y5 student enrollment by each weight category. Similarly, a set of input cards of card type 20 is required for each local revenue item for which revenues are being estimated.

Instructions for the preparation of input data cards for TAPS and REVSIM are detailed below.

General Instructions for Recording Input Data

a. Record input data on either IBM Form X20-8030-03 UM/025, General Purpose Card Punching Form, or IBM Form GX28-7327-6 U/M050, FØRTRAN Coding Form. Examples of each of these forms is shown in Exhibit III-4-i and Exhibit III-4-ii, respectively.

(1) Use one line per card.

b. Enter the program title "TAPS" (Trend Analysis Program) or "REVSIM" (Revenue Simulation Program), as appropriate, the name of the person completing the input cards, and the preparation date (retain actual sources of data and/or name of data source for future reference) in the spaces provided.

c. A data card consists of a number of fields. Each field is a consecutive set of columns on an 80 column card. There are two types of fields: numeric and alphanumeric. The general form of data field specifications or formats are the numeric forms nIw and nFw.d, and the alpha-numeric form nAw. The field format notation has the following meaning:

Specification	Type of Field
Iw	integer (numeric)
Fw.d	real number (without an exponent) - (numeric)
Aw	alpha-numeric

(1) w is the width of the whole field (total number of columns in the field including a decimal point, if the specification is F)

(2) d is the number of digits to the right of the decimal point

(3) the decimal point is annotated in a block, and is included in the width specification

(4) where successive input or output fields are identical in format, an unsigned integer constant preceding one format specification, indicates the number of times that specification is repeated (F6.2, F6.2 is equivalent to 2F6.2).

(5) Spacing is indicated by the general form nX, which causes n spaces or blanks to be inputted.

(6) Several examples will illustrate how data is to be recorded based on the card format specifications using the above definitions. Numeric

fields are to contain numbers which are either numeric codes such as card format types or numeric quantities such as program costs, student weights, or expected revenues, etc. For every integer type numeric field a decimal point is not written in the field and the numbers should be right justified. For example, the number 1,789 written for a field specified as I8 would look like this:

				1	7	8	9

. For a real number type numeric field, a decimal point is written in the field preceding the number of places to the right of the decimal point and the number should be right-justified. For example, the percent 50.8(%) written for a field specified as F5.3 would look like this:

	.	5	0	8

, and 202837.00 written for a field specified as F10.0 would look like:

			2	0	2	8	3	7	.

Alpha-numeric fields are to contain titles, e.g., titles of the student weight categories, school district name, project titles, etc. Titles consist of alphabetic and numeric characters and blank spaces. Since what is written in the field is printed "as is" on output reports, titles should be left justified to improve the appearance and clarity of reports. If the format of an alphanumeric field is 6A4 (24 columns) and the title kindergarten is to be recorded, it should look like this:

K	I	N	D	E	R	G	A	R	T	E	N												

If the format specified for an input card is 3F10.0, and the nubmers to be recorded are 178,671, 328,765, and 487,651.25, the data would be written as:

			1	7	8	6	7	1	.				3	2	8	7	6	5	.				4	8	7	6	5	1	.

Note that for the last number the decimals were dropped.

d. Chart III-4-2 and Chart III-4-3, in flowchart format, present the steps to be followed in completing the data cards for TAPS and REVSIM, respectively.

CHART III-4-2

FLOWCHART OF STEPS FOR RECORDING DATA CARDS FOR TREND ANALYSIS COMPUTER PROGRAM

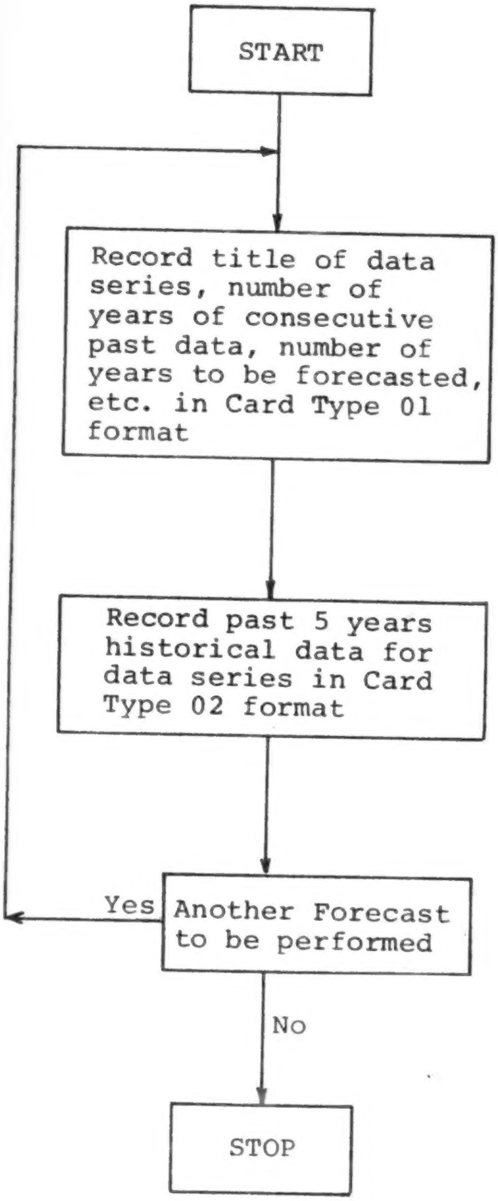
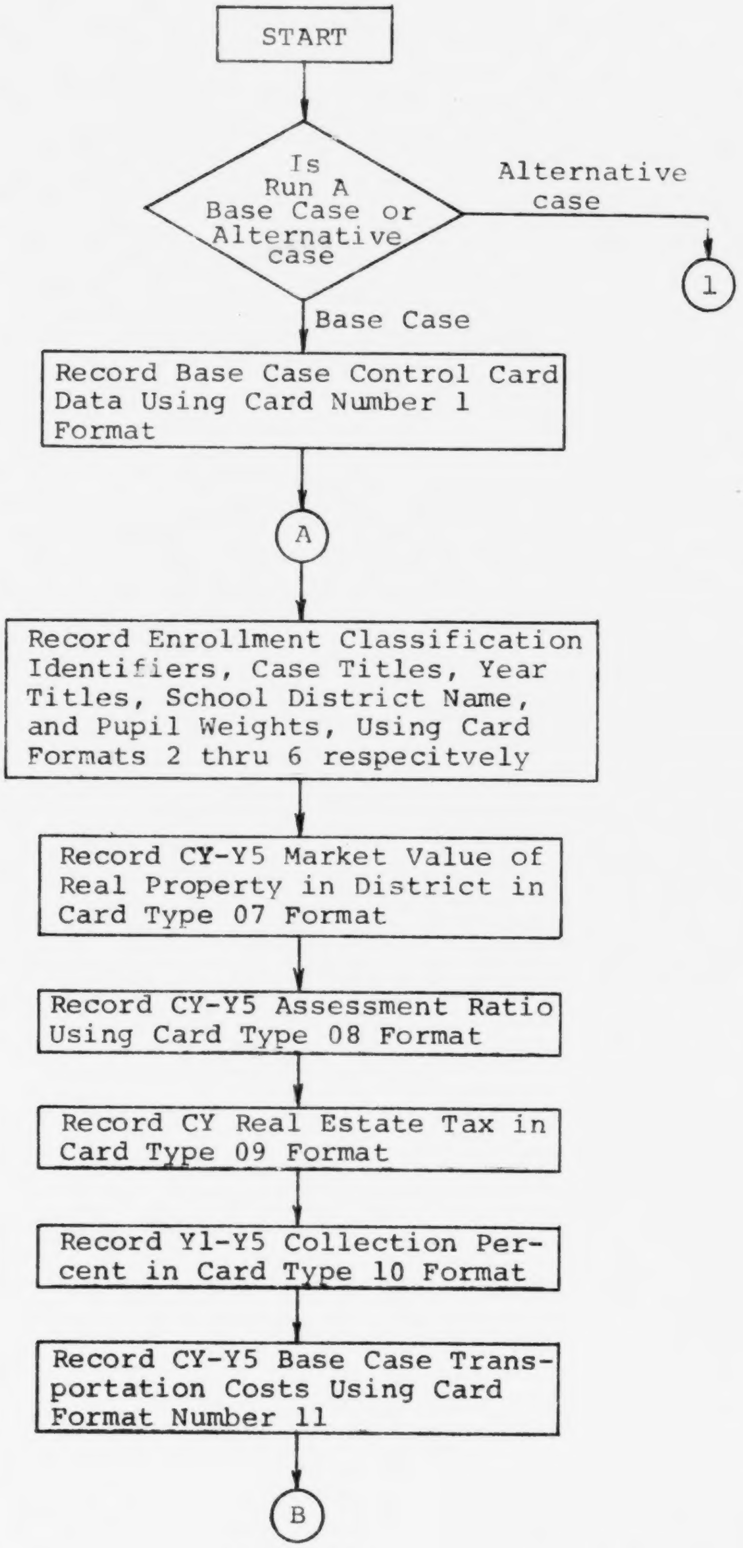
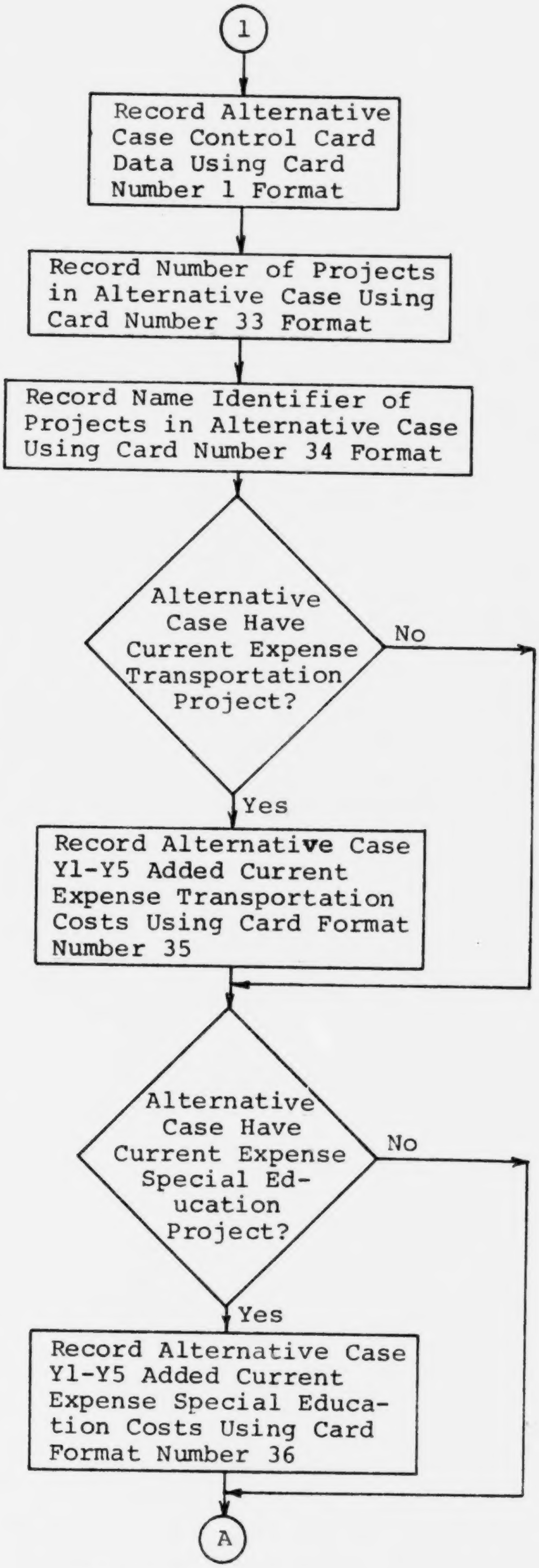
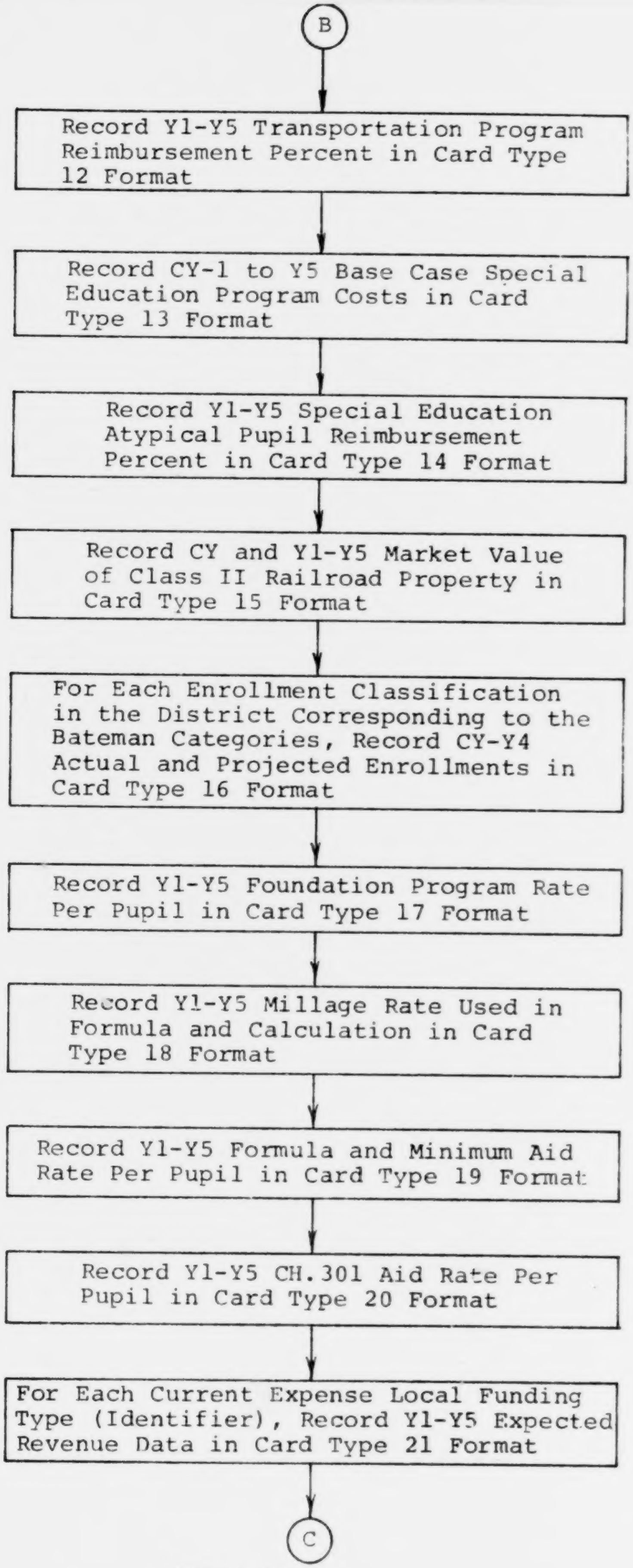

START
Record title of data series, number of years of consecutive past data, number of years to be forecasted, etc. in Card Type 01 format
Record past 5 years historical data for data series in Card Type 02 format
Yes
Another Forecast to be performed
No
STOP

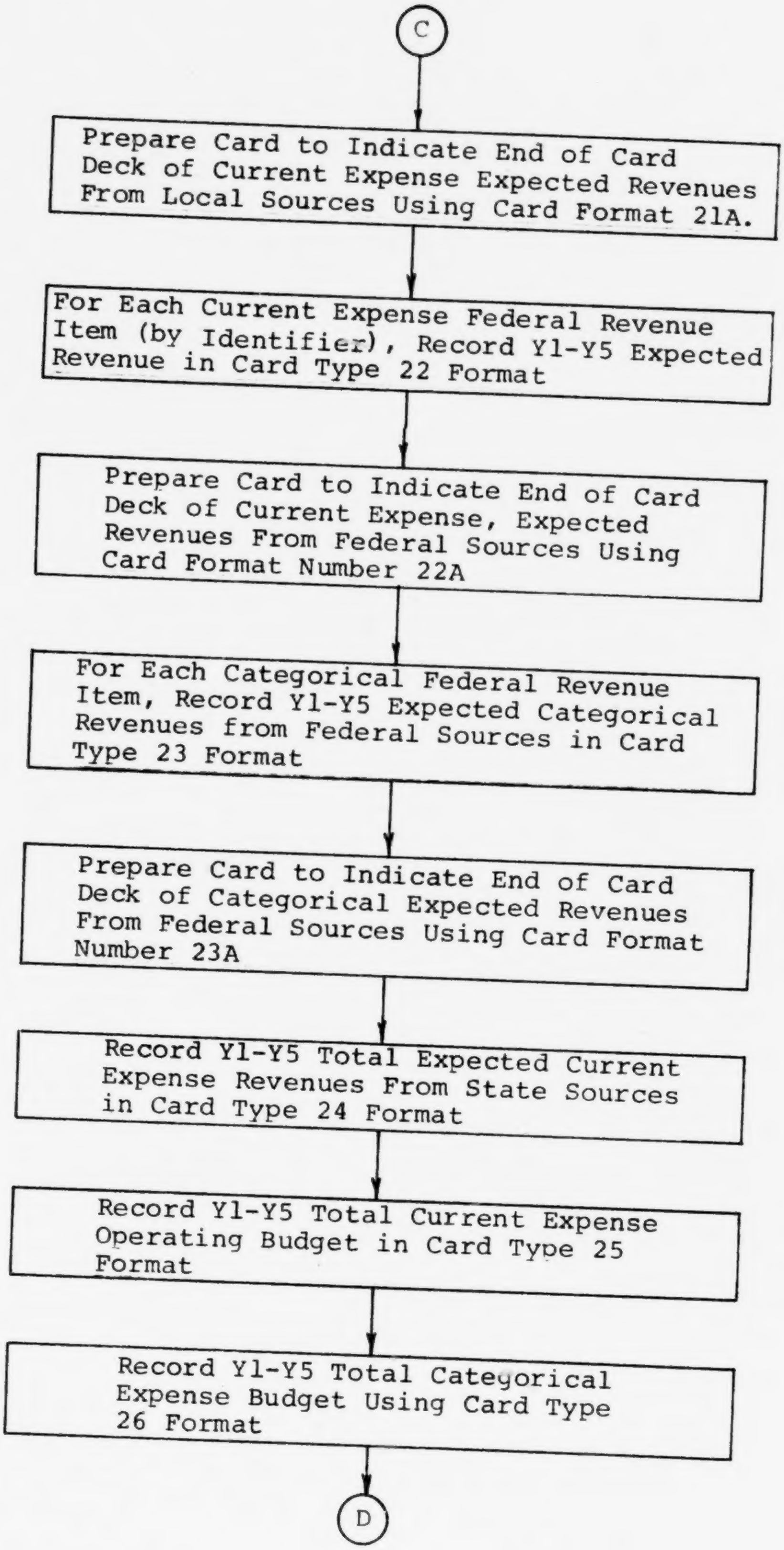
CHART III-4-3

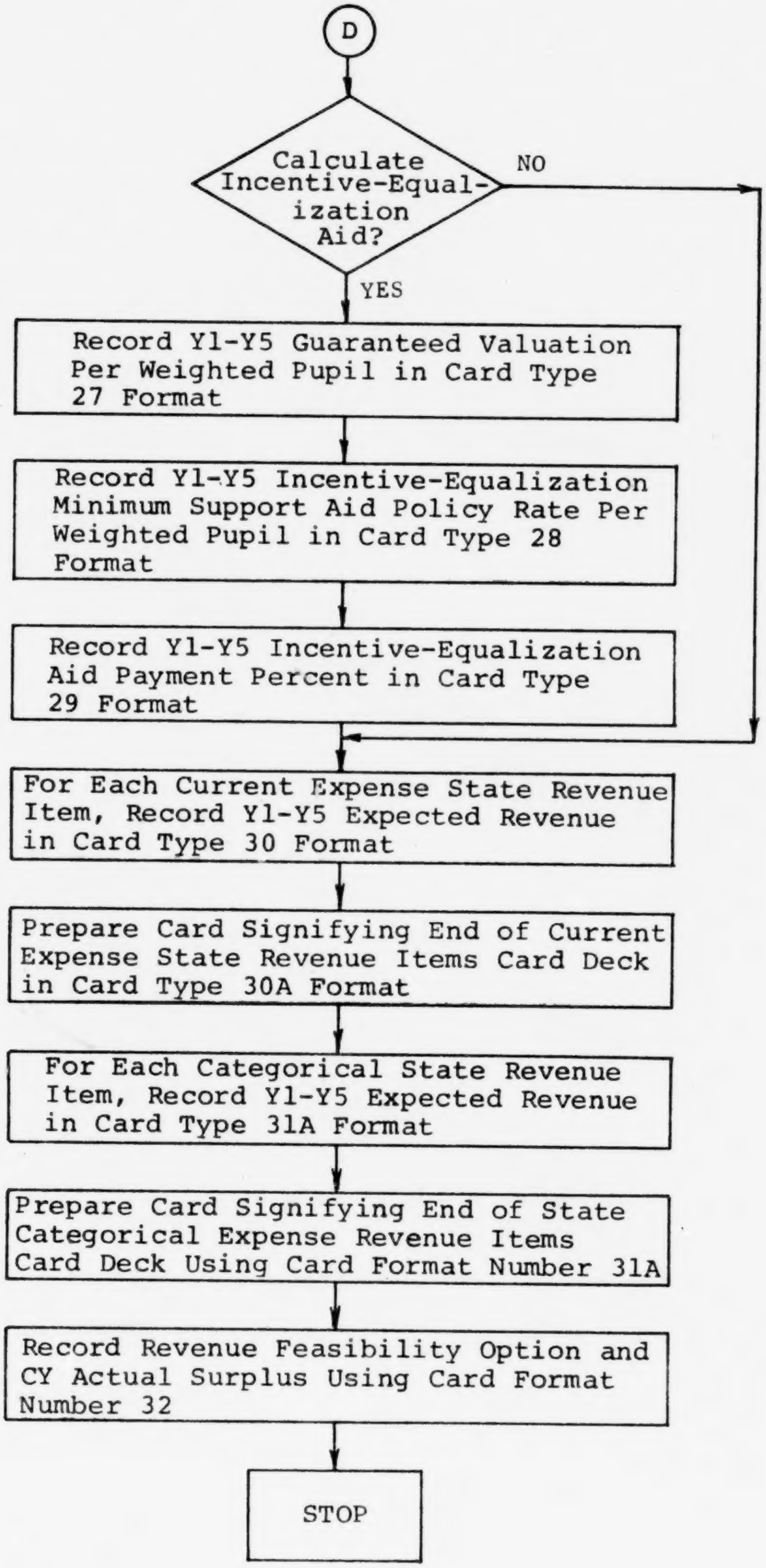
FLOWCHART OF STEPS FOR RECORDING DATA CARDS FOR REVENUE SIMULATOR COMPUTER PROGRAM


START
Is Run A Base Case or Alternative case
Alternative case
1
Base Case
Record Base Case Control Card Data Using Card Number 1 Format
A
Record Enrollment Classification Identifiers, Case Titles, Year Titles, School District Name, and Pupil Weights, Using Card Formats 2 thru 6 respecitvely
Record CY-Y5 Market Value of Real Property in District in Card Type 07 Format
Record CY-Y5 Assessment Ratio Using Card Type 08 Format
Record CY Real Estate Tax in Card Type 09 Format
Record Y1-Y5 Collection Percent in Card Type 10 Format
Record CY-Y5 Base Case Transportation Costs Using Card Format Number 11
B


1
Record Alternative Case Control Card Data Using Card Number 1 Format
Record Number of Projects in Alternative Case Using Card Number 33 Format
Record Name Identifier of Projects in Alternative Case Using Card Number 34 Format
Alternative Case Have Current Expense Transportation Project?
No
Yes
Record Alternative Case Y1-Y5 Added Current Expense Transportation Costs Using Card Format Number 35
Alternative Case Have Current Expense Special Education Project?
No
Yes
Record Alternative Case Y1-Y5 Added Current Expense Special Education Costs Using Card Format Number 36
A


B
Record Y1-Y5 Transportation Program Reimbursement Percent in Card Type 12 Format
Record CY-1 to Y5 Base Case Special Education Program Costs in Card Type 13 Format
Record Y1-Y5 Special Education Atypical Pupil Reimbursement Percent in Card Type 14 Format
Record CY and Y1-Y5 Market Value of Class II Railroad Property in Card Type 15 Format
For Each Enrollment Classification in the District Corresponding to the Bateman Categories, Record CY-Y4 Actual and Projected Enrollments in Card Type 16 Format
Record Y1-Y5 Foundation Program Rate Per Pupil in Card Type 17 Format
Record Y1-Y5 Millage Rate Used in Formula and Calculation in Card Type 18 Format
Record Y1-Y5 Formula and Minimum Aid Rate Per Pupil in Card Type 19 Format
Record Y1-Y5 CH.301 Aid Rate Per Pupil in Card Type 20 Format
For Each Current Expense Local Funding Type (Identifier), Record Y1-Y5 Expected Revenue Data in Card Type 21 Format
C


C
Prepare Card to Indicate End of Card Deck of Current Expense Expected Revenues From Local Sources Using Card Format 21A.
For Each Current Expense Federal Revenue Item (by Identifier), Record Y1-Y5 Expected Revenue in Card Type 22 Format
Prepare Card to Indicate End of Card Deck of Current Expense, Expected Revenues From Federal Sources Using Card Format Number 22A
For Each Categorical Federal Revenue Item, Record Y1-Y5 Expected Categorical Revenues from Federal Sources in Card Type 23 Format
Prepare Card to Indicate End of Card Deck of Categorical Expected Revenues From Federal Sources Using Card Format Number 23A
Record Y1-Y5 Total Expected Current Expense Revenues From State Sources in Card Type 24 Format
Record Y1-Y5 Total Current Expense Operating Budget in Card Type 25 Format
Record Y1-Y5 Total Categorical Expense Budget Using Card Type 26 Format
D


D
Calculate Incentive-Equalization Aid?
NO
YES
Record Y1-Y5 Guaranteed Valuation Per Weighted Pupil in Card Type 27 Format
Record Y1-Y5 Incentive-Equalization Minimum Support Aid Policy Rate Per Weighted Pupil in Card Type 28 Format
Record Y1-Y5 Incentive-Equalization Aid Payment Percent in Card Type 29 Format
For Each Current Expense State Revenue Item, Record Y1-Y5 Expected Revenue in Card Type 30 Format
Prepare Card Signifying End of Current Expense State Revenue Items Card Deck in Card Type 30A Format
For Each Categorical State Revenue Item, Record Y1-Y5 Expected Revenue in Card Type 31A Format
Prepare Card Signifying End of State Categorical Expense Revenue Items Card Deck Using Card Format Number 31A
Record Revenue Feasibility Option and CY Actual Surplus Using Card Format Number 32
STOP

IBM GENERAL PURPOSE CARD PUNCHING FORM

Exhibit III.4-i

JOB	
BY	DATE

PUNCHING INSTRUCTIONS

WRITTEN AS												
PUNCH AS												

NOTES

FIELD IDENTIFICATION

1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

1
2
3
4
5
6
7
8
9
10
11
12
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20

Printed in U.S.A. X20-8030-03 UM/025

PAGE ___ OF ___

IBM

EXHIBIT III.4-ii

FORTRAN Coding Form

28-7327-6 U/M 050
rinted in U.S.A

PROGRAM		PUNCHING INSTRUCTIONS	GRAPHIC
PROGRAMMER	DATE		PUNCH

C FOR COMMENT	STATEMENT NUMBER	CONT.	FORTRAN STATEMENT
1	2 3 4 5	6	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
1	2 3 4 5	6	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

*A standard card form, IBM electro 888157, is available for punching statements from this form

EXHIBIT III.4-ii

FORTRAN Coding Form

28-7327-6 U/M 050**
Printed in U.S.A.

	PUNCHING INSTRUCTIONS	GRAPHIC		PAGE OF
DATE		PUNCH		CARD ELECTRO NUMBER*

FORTRAN STATEMENT	IDENTIFICATION SEQUENCE
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72	73 74 75 76 77 78 79 80

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

is available for punching statements from this form

**Number of forms per pad may vary slightly

TREND ANALYSIS COMPUTER PROGRAM - DATA ESTIMATION PROCEDURES

Forecast of Market Value of Property

1. For each property type (land, improvements, business personalty, and class II railroad property) taxed at the local level for school purposes or used by the State in calculating State aid:

    a. Prepare a RUN CONTROL card in CARD TYPE 01 format as described in the section on input card purposes and formats for TAPS.

    b. Record at least five years past data (if appropriate) of market value for the property type in CARD TYPE 02 format, as described in the section on input card purposes and formats for TAPS.

        (1) Use the IBM General Purpose Coding Sheet or the IBM FORTRAN Coding Sheet.

            (a) Use a line for the RUN CONTROL data, and a line for the DATA SERIES values.

COMMENT: Behind straight-line projections lies the comparatively simple hypothesis that all the factors which influenced revenue during a base period will continue to operate in the future. This applies to both general forces and those unique to a particular tax source, although the probability that all forces would recur equally is unlikely. Only time is significant in this basic form. When straight-line projections are to be made, it is particularly important to scrutinize the data series and adjust it for changes in the definition of the tax base, to account for other unusual movements in the data series, and to take into consideration the tax rate which is levied. To summarize, the following criteria are important when employing straight-line methods to extrapolate time series data:

(2) An absolute minimum of five years of data should be available before straight-line methods are used;

(3) All necessary adjustments should be made so that the particular years for which revenue data are presented should represent the revenue behavior or experience of the tax source;

(4) A reasonably significant proportion of your total revenue yield should be provided by the specific revenue source or tax being projected; and

(5) For reliable straight-line projections, either alterations in the rate of a tax or changes in a revenue source must be identified and taken into account.

c. Published data sources for property tax data may be obtained from the County Abstract of Ratables, Annual Report of the Division of Taxation, N.J. Department of the Treasury, the Annual Report, of the Bureau of Local Finance, N.J. Department of Community Affairs, and Financial Statistics of New Jersey Local Government Annual Report published by the New Jersey Taxpayers Association.

(1) Each of the aforementioned publications includes the following data required in the real estate revenue calculations: either market value or taxable valuation of property by property type, assessment ratio (equalization percent), tax rate by purpose (total, school, municipal, county, and exemptions), taxes levied and collection percent.

(2) Market value can be obtained as the quotient of taxable or assessed valuation divided by the assessment percent.

d. Card type 2 format specifications limit a field to 8 characters, including a decimal point, therefore round property values in thousands, as appropriate.

2. Keypunch each line as coded on the coding sheet.
3. Prepare input stream and run the Trend Analysis program. The general overall order of the input program deck and data deck are as follows:

   - JCL for TAPS (written in FORTRAN) - as required by computer center being used

   - TAPS program card deck

   - JCL to signal end of program deck and start of data deck

   - Set of data input cards for data series being analyzed. Each data series input is composed of a RUN CONTROL card and a data card containing values of a past data of the time series

   - /* card
   - // card

   a. Refer to Exhibit III.4-vi for an example of the overall order of the TAPS program card deck.

4. Documentation for the Trend Analysis Program, including flow chart of the TAPS computer program, a program listing (object deck), and variable dictionary are presented below.

Review of TAPS Output Report

1. Exhibit III.4-iii is an example of an output report generated by TAPS for a data series input to the program. The data series analyzed on the sample printout is class II Railroad Property.

2. Review the output report for each property type to determine if the forecast of future years is acceptable (valid). It is recommended that the following factors be considered when analyzing the TAPS printout, and adjustments be made accordingly:

   a. Determine if revenue base in the future will change as a result of new construction (in terms of property classes under construction, and by public-private split), decrease in ratables (demolitions, increased property exemptions, decline in economic activity, etc.), the rate of reassessment of existing property, the distribution of reassessments among property types, or changes in the tax laws. Various city agencies, such as the Department of Planning and Development, Department of Redevelopment, the Assessor's Office, and Public Housing Agency, and the N.J. Departments of Community Affairs, and Labor and Industry are excellent sources of information relative to future directions of the municipality.

b. Knowledge of any changes in current administrative practices relative to the assessment of property, i.e., are assessments keeping pace with market values, are reassessments made on existing properties, etc.

c. If the test for statistical significance (part 4 of the printout) indicates the probability of no straight-line trend is less than or equal to 10%, use the straight line trend to project the market value of the property class (either the forecast of future years, or some acceptable value between the lower and upper limits for each forecast value). Otherwise, use the average or some acceptable value within the lower and upper ranges of the mean distribution as the forecast for each year of the planning period.

3. Annotate any adjustments next to the applicable forecast year, or re-enter adjusted past data into TAPS, as necessary, repeating the procedures detailed in the Paragraph entitled "Forecast of Market Value of Property," above.

4. Use Worksheet 1.0 (refer to Exhibit III.4-iv) to summarize the market value of property as follows:

   a. Write the name of the analyst, the date of the trend analysis review, and the forecast period years, in the spaces provided.

   b. Enter property class name and the Y1-Y5 market value forecasts for land, improvements, and business personalty. Class II Railroad Property forecast is excluded, since it is not used in the calculation of real estate tax revenues.

   c. Enter in the COMMENTS space remarks pertaining to the review performed on the data series printouts, and the reasons for selecting the forecasted value, as well as attaching any backup reports or information.

   d. Attach the TAPS output to WORKSHEET 1.0.

   e. Prepare a folder entitled "MARKET VALUE OF PROPERTY PROJECTIONS", and file WORKSHEET 1.0 with addenda for future reference.

EXHIBIT III.4-iii TREND ANALYSIS PROGRAM OUTPUT REPORT

Exhibit III.4-iii

```
TREND ANALYSIS AND FORECASTING SYSTEM

          DATA SERIES IS MKT VALUE CLASS II RR PROPERTY 1967-71

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                    CORRESPONDENCE BETWEEN THE ACTUAL DATA
          AND WHAT A STRAIGHT-LINE TREND WOULD HAVE PREDICTED AS THE ACTUAL DATA

                                                                 PERCENT ACTUAL - TREND
    YEAR      ACTUAL DATA       TREND PREDICTION      ACTUAL - TREND       IS OF ACTUAL

      1       3196073.00            3201603.00            -5530.00              -0.17

      2       3196095.00            3183143.00            12952.00               0.41

      3       3162143.00            3164682.00            -2539.00              -0.08

      4       3134551.00            3146222.00           -11671.00              -0.37

      5       3134551.00            3127761.00             6790.00               0.22

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    YEAR     FORECAST OF FUTURE YEARS

      6                  3109301.00

      7                  3090840.00

      8                  3072380.00

      9                  3053919.00

     10                  3035459.00

-----------------------------------------------------------------------------------------------------------

            RANGE OF PROBABLE VARIATION IN FORECAST OF FUTURE YEARS

       THERE IS A 95.0 PERCENT CHANCE THE ACTUAL FUTURE VALUE WILL FALL
                 BETWEEN THE LOWER AND UPPER FORECASTS SHOWN BELOW

    YEAR    LOWER FORECAST      FORECAST      UPPER FORECAST      UPPER - LOWER

      6       3058060.00      3109301.00        3160541.00          102480.69

      7       3031672.00      3090840.00        3150007.00          118334.50

      8       3004365.00      3072380.00        3140394.00          136029.50

      9       2976450.00      3053919.00        3131387.00          154936.25

     10       2948128.00      3035459.00        3122789.00          174661.50

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    THERE IS A  1.3 PERCENT CHANCE THE ACTUAL DATA HAVE NO SIGNIFICANT (STRAIGHT-LINE) TREND.
    IT IS CONSIDERED HAZARDOUS TO PROJECT USING THE TREND WHEN THE PERCENT CHANCE OF NO SIGNIFICANT TREND EXCEEDS 20.
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Exhibit III.4-iii

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CONFIDENCE INTERVAL ESTIMATE OF MEAN

 95.% CONFIDENCE INTERVAL


            LOWER LIMIT            MEAN     UPPER LIMIT

             3079351.00       3164682.00     3250012.00


 DEGREES OF FREEDOM:   4   EST. STD ERROR OF MEAN:     30733.65    T-STATISTIC: 2.7764
```

EXHIBIT III.4-iv SAMPLE OF WORKSHEET 1.0

WORKSHEET 1.0 SUMMARY OF Y1-Y5 MARKET VALUE OF PROPERTY FORECASTS

NAME: ____________________

DATE OF ANALYSIS: ____________________

FORECAST PERIOD: ____________________

MARKET VALUE OF PROPERTY

PROPERTY TYPE	Y1	Y2	Y3	Y4	Y5
1.					
2.					
3.					
4.					
5.					
6.					
TOTAL					

COMMENTS:

TREND ANALYSIS COMPUTER PROGRAM - INPUT CARD PURPOSES AND FORMATS

Introduction

This chapter details data card preparation instructions for the Trend Analysis Program. The purpose of each data card is presented first, followed by the card preparation procedures.

A set of two input cards, consisting of a RUN CONTROL card and a DATA SERIES VALUE card, is required for each data series which the user wishes to input to TAPS for analysis. There is no limitation on the number of data series which can be input to TAPS during a single run. Each set of input cards is placed one behind the other. Chart III.4-4 indicates the overall order of the input cards for the Trend Analysis Program. Chart III.4-2 previously presented the recording steps for TAPS data cards in flowchart format.

Chart III.4-4

Overall Order of Data Cards for Trend Analysis Program (TAPS)

- RUN CONTROL card to identify the data series for which forecasts are to be computed

- Card to input data about the data series being forecasted

TAPS Run Control Card

The RUN CONTROL card labels the data deck, but more importantly identifies the data series being input. It also signals to TAPS the number of years of past data being entered, the number of years to be forecasted, and the probability that the actual future values will fall between the lower and upper forecasted values (default probability is 90%). The title used to identify the data series is used to label the output report.

The RUN CONTROL Card is mandatory.

CARD TYPE 01 - RUN CONTROL CARD (Format 10A4, 2I2, F4.0)

```
CC 1                                     40 42 4445  48
   MARKET VALUE OF CLII RR PRØP 1967-1971    5 5
```

Card Columns	Data To Be Entered
CC1-40	Title of data series.
CC41-42	Number of years of consecutive past data.
CC43-44	Number of years to be forecasted.
CC45-48	Probability that the actual future value will fall between the lower and upper forecasts. Decimal point placed in CC48. If a probability is not assigned (zero), the default is 90%.

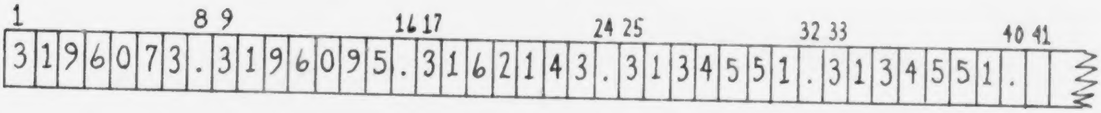
TAPS Data Series Input Card

The data series input card is used to input the consecutive years past data to TAPS. The number of fields of data entered on the data series card must be equal to the number of years of consecutive past data indicated on the RUN CONTROL card.

As many data series as desired can be input to TAPS during a single run, provided each data series data set consists of the RUN CONTROL card and the data card.

CARD TYPE 02 - HISTORICAL DATA FOR DATA SERIES (Format-10F8.0)

Sample for recording data as prescribed by the Format (for Class II RR Property in example):



```
1      8 9     1617    24 25   32 33   40 41
3196073.3196095.3162143.3134551.3134551.
```

Card Columns	Data To Be Entered
CC1-8	Past year historical data for data series.
CC9-16	Past year historical data for data series.
CC17-24	Past year historical data for data series.
CC25-32	Past year historical data for data series.
CC33-40	Past year historical data for data series.
CC41-48	Past year historical data for data series.
CC49-56	Past year historical data for data series.
CC57-64	Past year historical data for data series.
CC65-72	Past year historical data for data series.
CC73-80	Past year historical data for data series.

1. Record data values starting in CC1 with the earliest year for which you have obtained data for the data series to the most recent year.

2. The data series input card is formatted to contain a maximum of ten years of past data. However, if only 5 years of past data are to be input, only CC1-50 need be used, while CC51-80 remain blank.

REVENUE SIMULATOR COMPUTER PROGRAM - DATA ESTIMATION PROCEDURES

A. General

1. REVSIM requires the input of 32 different input card types for a base case run, and as many as 4 additional card types for an alternative case run. Much of the data read as input are historical data, which must be collected and recorded. Another category of data elements are generally fixed and known. Such data elements are parametric values like student weights, which are set by law, and are used to calculate weighted enrollment, or other input, such as year, case, and school district titles which identify and format output reports. The remaining category of data input must be estimated. Table III.4-c partial list of data requirements for REVSIM.

2. This chapter provides procedures for the estimation and/or preparation of input cards to REVSIM for all categories of data input. Procedures are provided for a base case run and an alternative case run separately. Data cards are discussed in the overall input order to the respective type of run. See Table III.4-d for a summary of the overall order of data card input.

Table III.4-d

Overall Order of Data Cards for the Revenue Simulator Program (REVSIM)

- Run Control card to identify the computer run
- An alternative plan card to input the number of projects in a proposed alternative plan
- A set of input data cards to input the names of the alternative plan projects
- Student Weight Category Title cards to input titles of student weight categories
- Case Title cards to input the titles of cases
- Year Title card to input the years in the forecast period
- School District Title card to input the name of the school district
- Pupil weight cards to input the weights by student weight category
- Data card to input the Y1-Y5 market value of real property
- Data card to input assessment ratio
- Data card to input real estate tax
- Data card to input real estate tax collection percent

- Data card to input Transportation Program costs
- Data card to input Transportation Program reimbursement percent
- Data card to input added current expense Transportation Program costs (if run is alternative case with current expense Transportation project)
- Data card to input Atypical Pupil (Special Education) Program costs
- Data card to input Atypical Pupil Reimbursement percent
- Data card to input added current expense Atypical Pupil Program costs (if run is alternative case with current expense Special Education project)
- Data card to input market value of Class II Railroad Property
- Set of cards to input enrollment data by student weight category
- Data card to input foundation rate per pupil used in Formula Aid calculation
- Data card to input millage rate used in computation of local fair share relative to Formula Aid
- Data card to input minimum aid rate per student
- Data card to input CH.301 aid rate per student
- Set of cards to input expected current expense revenues by local source identifier

- Data card to input Transportation Program costs
- Data card to input Transportation Program reimbursement percent
- Data card to input added current expense Transportation Program costs (if run is alternative case with current expense Transportation project)
- Data card to input Atypical Pupil (Special Education) Program costs
- Data card to input Atypical Pupil Reimbursement percent
- Data card to input added current expense Atypical Pupil Program costs (if run is alternative case with current expense Special Education project)
- Set of cards to input enrollment data by student weight category.
- Data card to input foundation rate per pupil used in Formula Aid calculation
- Data card to input millage rate used in computation of local fair share relative to Formula Aid
- Data card to input minimum aid rate per student
- Data card to input CH.301 aid rate per student
- Set of cards to input expected current expense revenues by local source identifier

- An end card (B in cc 5) to identify the end of the data cards about expected current expense revenues from local sources
- Set of cards to input expected current expense revenues by federal source identifier
- An end card (B in cc 5) to identify the end of the data cards about expected current expense revenues from federal sources
- Set of cards to input expected categorical revenues by federal source identifier
- An end card (N in cc 5) to identify the end of the data cards about expected categorical revenues from federal sources
- Data card to input total expected other current expense revenues from state sources
- Data card to input total current expense program costs (operating budget)
- Data card to input total categorical costs
- Data card to input guarnateed valuation per weighted pupil (for use in the Incentive-Equalization Aid Formula)
- Data card to input minimum support aid rate per weighted pupil
- Data card to input Incentive-Equalization Aid payment percent

- Set of data cards to input expected current expense revenues by State source identifier

- An end card (B in cc 5) to identify the end of the data cards about expected current expense revenues from State sources

- Set of data cards to input expected categorical revenues by State source identifier

- An end card (N in cc 5) to identify the end of the data cards about expected categorical revenues from State sources

- Revenue Feasibility Option Control Card to input the selected revenue feasibility option, and to input current year actual surplus

3. Refer to the general instructions on data preparation to review data recording instructions, and the section below for details on the REVSIM card type formats.

B. For Base Case

1. Prepare RUN CONTROL card for a base case run in accordance with CARD TYPE 01 format.

2. Prepare a set of ENROLLMENT TITLE cards in accordance with CARD TYPE 02 format. Select the titles applicable to your district from the approved list in Table III.4-2, Part A.

3. Prepare a set of CASE TITLE cards in accordance with CARD TYPE 03 format. Table III.4-f lists the case, and year titles.

4. Prepare YEAR TITLE card as prescribed for CARD TYPE 04 format.

5. Prepare SCHOOL DISTRICT TITLE card in accordance with CARD TYPE 05 format.

6. Prepare a PUPIL WEIGHT card in accordance with CARD TYPE 06 format. Select the weights corresponding to your district's weight categories from the list in Table III.4-e, Part B.

TABLE III.4-e

Incentive-Equalization Aid (Bateman) Student Weight Category Identifiers and Pupil Weights

Part A - STUDENT WEIGHT CATEGORY IDENTIFIERS

CC ① ㉔

1. KINDERGARTEN
2. GRADES 1-6
3. 7-8(NOT IN APPR MID/JHS)
4. GRADES 7-9
5. 5-6YR HS PUPILS
6. GRADES 10-12
7. VOCATIONAL SCHOOL PUPILS
8. EVENING SCHOOL PUPILS
9. ACCR EVENHS-POST HS
10. AFDC CHILDREN(AGES 5-17)

TOTAL ENROLLMENT

Part B - STUDENT WEIGHTS BY CATEGORY

CC ①	⑦	⑬	⑲	㉕	㉛	㊲	㊸	㊾	(55)
00.750	01.000	01.150	01.250	01.275	01.300	02.000	01.000	01.300	00.500

Part C - STUDENT WEIGHT CATEGORY IDENTIFIERS - ABBREVIATIONS

CC ① ⑥

1. KINDER
2. G1-6
3. 7-8
4. G7-9
5. 5-6 HS
6. G10-12
7. VØCED
8. EVENSC
9. AEPHS
10. AFDC
11. TØTAL

TABLE III.4-f

Case, Year, and School District Titles

CASE TITLES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
0	3	B	A	S	E	C	A	S	E																

Base Case (cc 3-11)
Alternative Case Number (cc 3-25)
Revenue Forecast (cc 6-21)
Revenue Feasibility (cc 6-24)

YEAR TITLES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	4	C	Y			Y	1			Y	2			Y	3			Y	4			Y	5

7. Real Estate Tax Data Estimation

   a. Prepare an input data card for MARKET VALUE OF PROPERTY using CARD TYPE 07, recording actual CY market value and the Y1-Y5 projected total market value calculated on WORKSHEET 1.0.

   b. Assessment ratio estimates

      (1) Prepare CARD TYPE 08 entering the actual CY and Y1-Y5 assessment ratio estimates. The assessment ratio or percent is defined as the proportion of assessed or taxable valuation to market value.

      (2) Project the assessment ratio for Y1-Y5 based on any of the following assumptions:

         (a) Set at the CY level i.e., the ratio of assessed to market value remains unchanged.

         (b) Assume continuation of past trends either at a constant percent rate or a constant amount of increase or decrease.

         (c) Set as average of several years past assessment ratios.

         (d) Set a one percent increase for each 1% increase in personal income.

(e) Impending change in assessment procedures or a general reassessment of property will take place, thereby increasing or decreasing the assessment percent.

c. Real Estate Tax Estimates (for school purposes only)

(1) Prepare CARD TYPE 09 entering the actual CY real estate tax in mills and the estimates of the Y1-Y5 real estate tax in mills. To be consistent with STEP, the Y1-Y5 real estate tax rate should be zero, since revenue feasibility involves calculation of the future tax rate required to meet projected expenditures. However, the user can estimate Y1-Y5 rates to simulate their impact.

(2) The real estate tax rate is calculated based upon $100 of assessed valuation, however, the real estate tax must be recorded in mills. The real estate tax rate in mills (rate per dollar of valuation) is calculated as follows:

Real Estate Tax Rate in Mills = Tax rate in cents per thousand dollars of assessed valuation.

(3) The real estate tax for Y1-Y5 can be projected based on any of the following assumptions:

(a) Set at the CY level.

(b) Set as an average of several years of past real estate tax rates.

(c) Set at constant percentage rate or amount of increase or decrease, taking into account the ratio of real estate tax rate for school purposes to the total real estate tax.

(d) Set at a level based upon knowledge of changes in assessment procedures, changes in the tax base, or impending changes in the tax laws, etc.

d. Collection Percent Estimates

(1) The Collection percent is defined as the proportion of the total annual tax levy collected during a fiscal year.

(2) Prepare CARD TYPE 10, entering the actual CY collection percent and the estimates of the Y1-Y5 collection percent (State law requires that a collection percent be no lower than that of the current year).

(3) The Y1-Y5 collection percent can be estimated, based on any of the following assumptions:

(a) Set at the CY level for the entire period, assuming no change in the collection percent.

(b) Set as the average of several years of past data.

(c) Set at a constant percentage rate or amount of increase or decrease.

8. Transportation Aid Forecast

a. Transportation Program Cost Estimates

(1) Refer to the Resource Requirements Module for the Y1-Y5 estimates of Transportation Program Costs, and the Statement of Income and Sources in the School District Budget document or other relative documents to obtain an estimate of CY Transportation Program costs.

(2) Review the Y1-Y5 estimates in view of past transportation costs, any future trends or conditions, and last year's analysis and estimates of Y1-Y5 TRANSPORTATION Aid.

(3) Prepare TRANSPORTATION PROGRAM COSTS card as prescribed in the input card preparation instructions for CARD TYPE 11.

(a) Document your reasons for revising the estimates provided by the model (include model estimates, your estimates, difference, reasons for change, date and name).

b. Transportation Program Costs Reimbursement Percent

(1) Estimate the Y1-Y5 reimbursement percent, using any of the following criteria:

(a) Use the current percent, as set by the State, for each year of the planning period.

(b) Increase or decrease the percent by some constant absolute amount or rate in order to observe or determine the impact on Transportation Aid.

(2) Document your reasons for any revisions from the current rate as set by the State (cite current rate, revised rates, reasons for revision, date and name).

c. Prepare a folder entitled TRANSPORTATION AID FORECAST BACKUP DATA.

(1) File all data source documents, and documentation sheets relating estimate changes.

(2) Label all documentation relative to preparation date and five year planning period (keep all backup material separated by the five year planning period with which it is associated).

(3) Retain files for future reference and analysis.

9. Special Education Aid Forecast

a. Special Education Program Cost Estimates

(1) Refer to the Resource Requirements Module for the Y1-Y5 estimates of Special Education Program costs, and the Statement of Income and Sources in the School District Budget document, or other pertinent sources, to obtain the most recent two years of past actual Special Education Program costs.

(2) Review the Y1-Y5 estimates in view of past cost data, assumptions concerning the estimates, any future trends or directions with respect to Special Education programs in the district, and an analysis of last year's assumptions and predictions.

(3) Prepare SPECIAL EDUCATION PROGRAM COSTS card as prescribed for CARD TYPE 12 of the card preparation instructions.

(a) Document your reasons for revising the model estimates (include in your statement the Y1-Y5 model estimates, your revised estimates, the differences between the estimates, reasons for the change, the date, and your name).

b. Special Education Program Costs Reimbursement Percent

(1) Estimate the Y1-Y5 reimbursement percent using any of the following criteria:

(a) Use the current percent, as set by the State, for each year of the planning period.

(b) Increase or decrease the percent by some constant absolute amount or rate.

(2) Document reasons for any revisions from the current rate set by the State (cite the current policy rate, revised rates, reasons for the revisions, date and name).

c. Retention of Backup Data for Special Education Aid Forecast

(1) Prepare a folder entitled SPECIAL EDUCATION AID FORECAST BACKUP DATA.

(2) File all data source documents and documentation sheets relating estimate changes in the file folder.

(3) Keep documentation separate and identified by the appropriate five year planning period to which it is applicable.

(4) Retain backup file for future reference and analysis.

10. Formula Aid Forecast

a. Enrollment Estimates by Student Weight Category

(1) Aggregate current enrollment by the appropriate student weight categories as selected in the preparation of CARD TYPE 02.

(2) Refer to the Enrollment Forecaster Module, Report Number TSD ENR-1036, for the Y1-Y5 "scrubbed" estimates of enrollment by student weight category (i.e., enrollment estimates previously reviewed, analyzed, and adjusted as necessary).

(3) Prepare a set of ENROLLMENT FORECAST data input cards in accordance with CARD TYPE 15 preparation instructions.

(a) Prepare one card for each student weight category for which enrollments have been forecasted.

b. Foundation Rate Per Pupil Estimate

(1) Estimate the Y1-Y5 foundation rate per pupil used in the Formula Aid calculation as follows:

(a) Use the current rate of $400.00 as set by the State (law) for each year of the forecast period.

(b) Increase or decrease the rate by some constant absolute amount or proportion (i.e., based on average per pupil cost and proportion supported by the State).

(2) Document reasons for any revisions from the current rate set by the State. Cite the current policy rate, revised rates, reasons for all revisions, date and name.

(3) Prepare a FOUNDATION RATE PER PUPIL card as prescribed by CARD TYPE 16 preparation instructions.

c. Millage Rate Estimates

(1) Estimate the Y1-Y5 millage rate used to calculate Formula Aid as follows:

(a) Use the current policy rate of .01050 mills as set by the State (law) for each year of the forecast.

(b) Increase or decrease the millage rate by some constant absolute amount or proportion.

(2) Document all reasons for any revisions from the current State rate, citing current rate, revisions, reasons for change, date and name.

(3) Prepare a MILLAGE RATE card in accordance with CARD TYPE 17 preparation instructions.

d. Minimum Aid Rate Estimates

(1) Estimate the Y1-Y5 minimum aid rate per student for Formula Aid as follows:

(a) Use the current policy rate of $75.00 as set by State law for each year of the forecast period.

(b) Increase or decrease the minimum aid rates by some constant absolute amount or proportion.

(2) Document all reasons for any revisions from the current State rate, citing the current and revised rates by year, reasons for change (assumptions and conditions), date and name.

        (3) Prepare MINIMUM AID RATE card in accordance with CARD TYPE 18 instructions.

    e. CH301 Aid Rate

        (1) Estimate the Y1-Y5 CH301 Aid Rate as indicated in Paragraphs 10 d(1) to 10 d(2) above (CH301 Aid Rate is currently set at $25.00 per pupil).

        (2) Prepare CH301 Aid Rate card in accordance with CARD TYPE 19 data preparation instructions.

11. Estimates of Revenue Items from Local Funding Sources

    a. Table III.4-g identifies several possible local sources of revenue.

    b. In general, projection of the items shown in Table III.4-g, may be done by:

        (1) Straight-line trend using the TREND ANALYSIS PROGRAM as detailed in the sections for using TAPS.

        (2) By projection of base and rate factors for specific revenue items (e.g., for TUITION, projection of the number of pupils attending the school district from other school districts and the estimated tuition charges; earnings on temporary deposits, estimation based on anticipated level of deposits and interest rate).

        (3) Your judgment.

Table III .4-g

List of Local Funding Sources

Tuition

Use of Buildings and Gounds

Janitorial Service

Forfeited Deposits

Sale of Materials and Supplies

Gasoline Tax Refund

Textbook Fines

Interest on Deposits

Gifts, Requests and Endownment

Sale of Real Estate and Equipment

Other Miscellaneous Items

c. Revenue yield from sale of equipment, real estate, and gifts are episodic, however, sales yields should be relatively predictable.

d. For each revenue item, write a narrative explaining all assumptions underlying your estimates, retain all backup documents (such as any TAPS printouts), sign and date the data sheet.

e. Prepare a data card in CARD TYPE 20 format for each local revenue item for which revenues are estimated.

f. Retention of Backup Data for Local Revenue Estimation.

   (1) Prepare a folder entitled LOCAL REVENUE ITEMS FORECAST - BACKUP DATA

   (2) Identify all backup documents by writing the appropriate five year planning period on every paper to which it is applicable.

   (3) File documents by planning period identification date.

   (4) Retain backup file for future reference and analysis.

12. Estimates of Revenues from Federal Funding Sources

a. General

(1) Prepare separate estimates of federal current expense revenue items and federal categorical revenue items.

(a) Federal current expense revenues may be available for a district's vocational school program in the case where federal activities (property and personnel) have a significant impact on a district's program, and from the National Defense Education Act, etc. See Table III.4-a for a list of federal current expense sources.

(b) Categorical revenues may be available under various Federal education programs, each requiring specific application procedures for applying for the money. (See Table III.4-h for a list of current federally funded projects.)

(2) The knowledge of potential program expansion, contraction or termination, and the magnitude of appropriations is critical.

(a) Information relative to the expectation and duration of federal grants may be obtained through contact with the appropriate State officials.

Table III.4-h

FEDERAL/STATE CURRENTLY FUNDED PROJECTS

	1968-69 Budget	1969-70 Budget	1970-71 Budget
Title I	796,677.	1,300,609.	1,706,325.
Title II - Regular	17,121.	14,211.	17,856.
Title II - Special	1,745.	----	----
Title III - Grant Demonstration	217,987.	38,113.	----
Outward Action Bound	48,500.	92,237.	----
Title VI - Year Round	33,150.	24,905.	22,505.
Title VIII - Planning	19,005.	19,005.	----
Summer Head Start	137,596.	142,234.	----
Follow Through	113,605.	268,111.	452,607.
Jr. #1 Community School	9,370.	1,208.	----
Pre-Kindergarten	211,205.	230,807.	343,774.
Adult Basic Education	21,660.	25,000.	29,371.
ABE Summer	----	9,800.	----
WIN - GED	10,709.	11,500.	16,392.
WIN - GED Summer	----	1,000.	----
WIN - ABE	28,923.	29,000.	43,749.
WIN - ABE Summer	----	5,799.	----
Technology for Children	----	52,950.	----
Special Ed. Service Project	140.	----	----
EPDA	----	68,000.	----
21 - 201 Nurses Aide	5,837.	----	----
Adult Literacy Program	24,937.	43,837.	42,159.
G-32 Placement Coordinator	9,500.	14,000.	----
Follow Through Newsletter	----	200.	400.
21.7 Card Punch Opr.	10,872.	----	----
21.109 Vocational Occ. Ed.	6,506.	5,000.	3,145.
Summer Employment Orientation	10,000.	24,450.	30,600.
Summer Work Study	15,000.	25,000.	38,400.
Coop Industrial Education	----	600.	----
G-6 Counselor Retraining	2,500.	1,250.	----
G-37/38 Development Program	4,772.	2,386.	----
Teacher Innovation:			
Wyrough	1,000.	671.	----
Delaney	----	1,000.	----
Freeman	1,000.	1,000.	----
Costello	----	980.	----
Cappelli	1,000.	817.	----
Heisler-Hencheck	----	1,000.	----
National Teacher Corps - Temple	34,858.	----	----
National Teacher Corps - State	54,942.	204,185.	----

Table III.4-h (cont'd)

	1968-69 Budget	1969-70 Budget	1970-71 Budget
Pilot Study - Jr. #5	11,737.	1,162.	----
Research for Better Schools	60,100.	74,100.	53,000.
Operation Insight	5,000.	----	----
Community Schools	3,756.	2,771.	----
High School Equivalency	----	20,267.	39,652.
Distributive Education	----	600.	----
Trenton State Project	----	69,000.	48,964.
Pre-Vocational	29,929.	----	----
Consumer Learning Center	----	30,724.	48,433.
Model Cities Reading Program	----	96,000.	67,630.
Program Development	----	3,482.	----
Career Opportunities Program	----	160,250.	118,620.
Title III Co-op Systems	----	2,350.	----
Pilot Program Assistance Recipients	----	20,605.	----
Consumer Workshop 21.510 A-13	----	10,610.	12,952.
Family Life Center	----	30,724.	----
21.5210 Vocational Program	----	48,887.	13,580.
Model Cities Guidance	----	115,402.	65,402.
Model Cities Follow Through	----	2,262.	----
J.O.B.S. Switlick	----	17,283.	----
J.O.B.S. Circle F	----	19,163.	----
Title III Planning	----	63,200.	65,550.
Ohio State Project	800.	----	----
Umbrella I	143,977.	----	----
Umbrella II	274,218.	----	----
Umbrella III	----	176,896.	----
NDEA Title III	----	10,446.	20,000.
NDEA Title V	----	1,081.	----
Umbrella IV MDTA			
Operating & Administration	191,465.	123,061.	----
Basic Education	43,568.	65,419.	----
Pre-Vocational	13,024.	23,814.	----
Auto Mechanic	15,151.	18,744.	----
Clerk Typist	20,407.	22,407.	----
Clerk-Stenographer	20,746.	24,255.	----
Cook	9,330.	----	----
Electrical Repairman	15,997.	----	----
Machine Operator	13,928.	19,324.	----
Nurses Aide	14,036.	18,922.	----
Welding	15,117.	21,507.	----
Auto Body	----	23,813.	----
Electronic	----	32,283.	----

Table III.4-h (cont'd)

	1968-69 Budget	1969-70 Budget	1970-71 Budget
Umbrella IV CEP			
Basic Education	-----	27,664.	-----
Auto Mechanics	-----	14,003.	-----
Clerk Typist	-----	16,972.	-----
Clerk-Stenographer	-----	17,982.	-----
Machine Operator	-----	14,018.	-----
Nurses Aide	-----	14,365.	-----
Welder	-----	16,358.	-----
TOTAL	2,752,405.	4,153,041.	
Bi-Lingual			24,425.
Model Cities Mini-Center			50,000.
Week About Training			10,420.
Teacher Innovation - Simonson			1,000.
			3,386,911.

Source: Business Department, Trenton School District, Spring, 1971.

(3) For every federal source of funds you have identified as an expected source of revenue, prepare Y1-Y5 estimates on the basis of some assumptions about the continued level of expenditures, and/or on the basis of the projection of base and rate factors, where applicable.

(4) Prepare a card in CARD TYPE 21 format for each federal current expense item for which revenues are estimated.

  (a) Prepare and insert the appropriate END card (CARD TYPE 21A) after the last CARD TYPE 21 input card.

(5) Prepare a card in CARD TYPE 22 format for each federal categorical item for which revenues are estimated.

COMMENT: For purposes of input to REVSIM, a revenue item may be identified simply by the name of the Federal law, or by a more detailed classification such as law and fiscal year, or law, project identifier and year, etc. The major consideration is to first identify a source and estimate total revenues from that source for the appropriate year in the planning cycle when the revenues can be expected. Accordingly, only two cards for estimating revenues from Federal sources need be entered to REVSIM, a card for Y1-Y5 estimates of total current expense federal revenues, and a card for Y1-Y5 estimates of total categorical revenues. (The appropriate END card would be required after the total current expense estimate and after the total categorical estimate.)

(6) Establish and maintain records by revenue item, detailing the Y1-Y5 estimates and the assumptions underlying these estimates, the date, and name of the analyst.

(7) Retain all backup data and sources, and file in a folder entitled "FEDERAL REVENUE ESTIMATES," in accordance with the procedures in 11f (2) through 11f (4) above.

13. Estimates of Revenue from State Funding Sources

a. Prepare separate estimates for State current expense revenue items and State categorical revenue items.

(1) Current expense revenue items from State sources are listed in Table 111.4-i. However, estimates for Transportation Aid and Atypical Pupil are not required since these were calculated previously.

Table III.4-i

Current Expense Revenue Items From State Sources

Public School Law Enforcement Aid

Vocational Day School Aid

Evening School for Foreign Born Residents

Adult Education

*Transportation Aid

*Atypical Pupil Aid

*Incentive-Equalization Aid

---

*Not included in Card Type 30 set of input cards.

(2) Estimates of State current expense items may be done on the basis of:

(a) Straight-line trend using the TAPS program procedures detailed in Chapter II.

(b) By projection of base and rate factors for specific revenue items (e.g., law enforcement, projection of number of school security officers for so many projected enrollees and the estimated salary costs).

(c) Your judgment (e.g., Evening School for Foreign Born, State provides maximum of $5,000.00 depending on the amount of matching funds raised locally).

(3) Estimate State categorical revenue items in accordance with procedures discussed for federal categorical items in Paragraph 12a (2) and 12a (3).

b. Prepare a card in CARD TYPE 23 format for the aggregation of all current expense revenues from State current expense sources.

c. Prepare a card in CARD TYPE 29 format and CARD TYPE 30 format for each State current expense and for each State categorical expense item, respectively, for which revenues are estimated.

  (1) Prepare and insert an appropriate END card (CARD TYPE 29A and CARD TYPE 30A, respectively) after the last CARD TYPE 29 input card and the last CARD TYPE 30 input card.

  (2) Refer to the comment Paragraph 12a (5) for instructions relative to the number of CARD TYPE 29 and 30 cards required.

d. Paragraphs 12a (6) and 12a (7) also apply to documenting all revenue estimates and maintaining a backup file of "STATE REVENUE ESTIMATES."

14. Current Expense Budget Forecast

a. Refer to the Resource Requirements Module for the Y1-Y5 estimates of total current expense costs.

b. Review the estimates in view of past total costs, analysis and estimates of Y1-Y5 total costs, and the various factors comprising the cost calculation.

c. Prepare CURRENT EXPENSE BUDGET FORECAST card as described in the input preparation instructions for CARD TYPE 24.

d. Document reasons and assumptions underlying any adjustment to the model estimate of total costs, including the model estimates, your revised quantities, date and name, and file in a "CURRENT EXPENSE BUDGET FORECAST" folder.

15. Categorical Budget Forecast

a. Repeat the procedures described under Paragraph 14 above, but for CATEGORICAL BUDGET FORECAST, and prepare a CATEGORICAL EXPENSE BUDGET card as described in the input preparation instructions for CARD TYPE 25.

16. Guaranteed Valuation Per Weighted Pupil Estimates

a. Estimate the Y1-Y5 guaranteed valuation rate as follows:

(1) Assume present classification unchanged and use corresponding rate assigned to classification.

(2) Assume classification assumption changes during planning period, and select the corresponding rate (as currently set), or some revised amount.

b. Table III.4-j lists the district classification titles and the corresponding guaranteed value rates and minimum support rates.

c. Document all reasons for any adjustments to your district's current classification assumption, citing in addition, the old and new classification titles and rates, date and name.

   (1) Prepare a "GUARANTEED VALUATION RATE" folder and file all documentation for future reference.

d. Prepare a GUARANTEED VALUATION PER WEIGHTED PUPIL card in accordance with CARD TYPE 26 preparation instructions.

17. Minimum Support Aid Policy Rate Estimates

a. Estimate the Y1-Y5 minimum support aid policy rate as prescribed in Paragraph 16a (1) and 16a (2) above. District classification selection must correspond to that for guaranteed valuation rate, as shown in Table III.4-j.

b. Document all reasons for any adjustments to your district's classification assumption, citing old and new classification titles and rates, date and name.

Table 111.4-j

Guaranteed Valuation Rates and Minimum Support Aid Rates by District Classification

District Classification	State Policy Rates Per Weighted Pupil	
	Minimum Support Aid	Guaranteed Valuation
Non-operating	$100.00	-----
Basic	110.00	30,000.00
Limited	122.50	33,750.00
Intermediate	135.00	37,500.00
Pre-comprehensive	147.50	41,250.00
Comprehensive	160.00	45,000.00

(1) Prepare a "Minimum Support Aid Rate" folder and file all documentation for future reference.

c. Prepare a MINIMUM SUPPORT AID POLICY RATE card in accordance with CARD TYPE 27 preparation instructions.

18. Incentive-Equalization Aid Payment Percent Estimates

a. Estimate the Y1-Y5 State payment percent for Incentive-Equalization Aid as follows:

(1) Assume payment percent will not change.

(2) Your judgment as to what rate will be to simulate impact on revenues and revenue feasibility.

b. Prepare a PAYMENT PERCENT card in accordance with CARD TYPE 28 preparation instructions.

19. Revenue Feasibility Option and Current Year Surplus

a. Prepare a REVENUE FEASIBILITY OPTION card in accordance with CARD TYPE 31 preparation instructions selecting one of the following revenue options:

Code	Explanation
0	Only actual current year surplus is carried forward to Y1 (any other estimated surpluses are ignored) and the tax rate fluctuates.
1	All surpluses carried forward and the tax rate does not decrease.
2	All surpluses carried forward and the tax rate fluctuates.

C. Alternative Case

1. General

a. An alternative case is defined as the addition to or deletion from the base case of a set of projects. Projects, as designed by various project groups, are considered in many possible combinations to form project sets to determine the implications of such combinations. Thus, projects may cause increases or decreases to the district's base case costs and possibly change expected revenues.

b. Accordingly, the alternative case card deck includes four new CARD TYPES and the base case CARD TYPES, specific cards in the latter group being adjusted to reflect the added/decreased alternative case costs and revenues.

c. An alternative case requires the following new card types:

(1) CARD TYPE 32 - Alternative Case Identifier Card

(2) CARD TYPE 33 - Alternative Case Project Title Card

(3) CARD TYPE 34 - Alternative Case Added Current Expense Transportation Costs Card

(4) CARD TYPE 35 - Alternative Case Added Current Expense Special Education Program Costs Card

d. An alternative case requires the complete set of base case cards. Only those base case CARD TYPES requiring possible adjustments or inclusion to reflect the alternative case data are indicated below:

(1) CARD TYPE 01 - RUN CONTROL Card

(2) CARD TYPE 20 - Y1-Y5 REVENUE ITEMS FROM LOCAL CURRENT EXPENSE SOURCES Card

(3) CARD TYPE 21 - Y1-Y5 REVENUE ITEMS FROM FEDERAL CURRENT EXPENSE SOURCES Card

(4) CARD TYPE 22 - Y1-Y5 REVENUE ITEMS FROM FEDERAL CATEGORICAL EXPENSE SOURCE Card

(5) CARD TYPE 23 - TOTAL OTHER CURRENT EXPENSE REVENUES FROM STATE SOURCES Card

(6) CARD TYPE 24 - Y1-Y5 CURRENT EXPENSE BUDGET Card

(7) CARD TYPE 25 - Y1-Y5 CATEGORICAL EXPENSE BUDGET Card

(8) CARD TYPE 29 - Y1-Y5 REVENUE ITEMS FROM STATE CURRENT EXPENSE SOURCES Card

(9) CARD TYPE 30 - Y1-Y5 REVENUE ITEMS FROM STATE CATEGORICAL SOURCES

e. CARD TYPES 20, 21, 22, 23, 29, and 30 require the estimation of additional expected revenues from local, state and federal sources (both categorical and current expense) associated with the alternative case (if any).

f. CARD TYPES 24 and 25 require the adjustment of base case current expense and non-current expense costs to reflect added alternative case costs.

g. CARD TYPE 01 is used to input various data to identify the alternative case run and to set various option indicators.

2. Alternative Case Data Estimation

a. Prepare a RUN CONTROL Card for an alternative case run as described in the data preparation instructions for CARD TYPE 01.

b. Prepare an ALTERNATIVE CASE PROJECT card in accordance with CARD TYPE 32 format.

c. Prepare a set of ALTERNATIVE CASE PROJECT TITLE cards in accordance with CARD TYPE 33 format.

  (1) One PROJECT TITLE card is prepared for each project in the project set.

d. Reproduce from the base case card deck the following card types: 02-06, 12, 14-19, 20A, 21A, 22A, 27-29, and 30A.

  (1) The aforementioned CARD TYPES do not generally change for an alternative case run. However, you can adjust various policy rates input via these CARD TYPES to simulate effect on revenues.

e. Reproduce from the base case card deck CARD TYPES 07-11, 13 and 31, make changes as necessary in CC 3-4.

f. Added Alternative Case Transportation Costs

  (1) If the alternative case project set contains a current expense transportation project, refer to the Resource Requirements Module and Paragraph B above. for procedures to estimate Y1-Y5 added transportation costs for an alternative case.

(2) Prepare an ALTERNATIVE CASE ADDED CURRENT EXPENSE TRANSPORTATION COSTS Card in CARD TYPE 34 format.

g. Added Alternative Case Special Education Costs

(1) If the alternative case project set contains a current expense, Special Education project, refer to the Resource Requirements Module and Paragraph B above, for procedures to estimate Y1-Y5 added special education costs for an alternative case.

(2) Prepare an ALTERNATIVE CASE ADDED CURRENT EXPENSE SPECIAL EDUCATION COSTS Card in CARD TYPE 35 format.

h. Estimation of Alternative Case Added Revenues

(1) Any additional revenues estimated for a project set must be input into REVSIM along with the base case revenue estimates.

(a) Estimate any expected revenues for the alternative case project set by source (local, federal, or state) and by type (current expense or categorical) as indicated in Paragraphs B11, B12, and B13 for local federal, and state revenues items, respectively.

1) Prepare the appropriate card type (CARD TYPE 20 for local revenue item, CARD TYPES 21 and 22 for current expense and categorical revenue items, and CARD TYPES 23, 29, and 30 for state current expense and categorical revenue item) for each revenue item estimated for the alternative case, or for the total revenues by source, by type for the alternative case.

2) Insert alternative case revenue item card types into their respective revenue item data sets immediately following the last base case revenue item and before the end card.

i. Estimation of Alternative Case Added Costs

(1) Refer to the Resource Requirements Module and Paragraphs B14 and B15 for procedures for estimating Y1-Y5 costs for the project set.

(2) Adjust base case Y1-Y5 total current expense costs and total categorical costs, as necessary, and prepare a card in CARD TYPE 24 format and a card in CARD TYPE 25 format to reflect total alternative case current expense and categorical expense costs.

j. Overall Order of Alternative Case Input Card Deck

(1) Refer to Table III.4-d for a list of the overall order of the data card input. Card type format instructions are also given in the order of the input card deck.

D. Keypunch Instructions

1. Upon completing the preparation of data card input on either of the standard IBM coding sheets shown in Exhibit III.4-i and Exhibit III.4-ii, keypunch each line as coded on the coding sheets. An example of a set of completed coding sheets for data input to REVSIM for a base case run is shown in Exhibit III.4-v.

E. Overall Order of REVSIM Card Deck

1. The overall order of the REVSIM card deck for a base case run or an alternative case run is:

- JCL for REVSIM as required by your computer facility for a FORTRAN program.
- REVSIM program deck.
- JCL to signal end of program deck and start of data deck.
- Set of REVSIM data input cards. Refer to Table III.4-d to obtain the overall order of the data cards.
- /* card.
- // card.

NOTE: Run the base case simulation and the alternative case simulation as separate jobs or steps.

a. Refer to Exhibit III.4-vii (in the program documentation section) for an example of the overall order of the REVSIM card deck.

2. Read REVSIM card deck into computer.

3. Documentation for the Revenue Simulation Computer Program, including flowchart of the REVSIM computer program, program listing, and variable dictionary are presented in the program documentation section.

EXHIBIT 111.4-v

Completed Coding Sheets for Data Input To
REVSIM for a Base Case Run

IBM

FORTRAN Coding Form

EXHIBIT III-1

GX28-7327-6 U/M 050**
Printed in U.S.A.

PROGRAM	REVENUE SIMULATOR - BASE CASE		PUNCHING INSTRUCTIONS	GRAPHIC
PROGRAMMER	JOE SMITH	DATE OCT 10, 1971		PUNCH

PAGE 1 OF 5

CARD ELECTRO NUMBER*

FORTRAN STATEMENT

```
01000CT. 10, 19716 9 50 0 0 0 50                          7X, 3A4, I1, 8I2
02KINDERGARTEN                                            2X, 6A4
02GRADES 1 TO 6
02GRADES 7 TO 9
02GRADES 10 TO 12
02VØCATIONAL DAY
02SHARED TIME A.V.T.S
02SPECIAL CLASSES
02AFDC
02TØTAL ENRØLLMENT

02BASE CASE                                               2X, 6A4
03ALTERNATIVE CASE NUMBER
03REVENUE FØRECAST
03REVENUE FEASIBILITY

04CY  Y1  Y2  Y3  Y4  Y5                                  2X, 6A4

05TRENTON SCHØOL DISTRICT                                 2X, 6A4

06    .750 1.000 1.250 1.300 2.000 1.300 1.000  .750      2X, 10F6.3

07>OMKTV364464850.356579600.357658400.358612000.359492880.360329010.   8X, 6F10.0
```

*A standard card form, IBM electro 888157, is available for punching statements from this form

**Number of forms per pad may vary slightly

IBM FORTRAN Coding Form

GX28-7327-6 U/M 050**
Printed in U.S.A.

PROGRAM		PUNCHING INSTRUCTIONS	GRAPHIC
PROGRAMMER	DATE		PUNCH
PAGE 2 OF 5	CARD ELECTRO NUMBER*		

STATEMENT NUMBER | CONT. | FORTRAN STATEMENT | IDENTIFICATION SEQUENCE

```
0800ASSP  .508 .508 .508 .508 .508 .508                        8X,6F5.3
0900RETX 54.90  0.0  0.0  0.0  0.0  0.0                        8X,6F6.2
1000CØLL 92.00 92.00 92.00 92.00 92.00 92.00                   8X,6F6.2
1100TRAN  270433.  319166.  323154.  327634.  330397.  463597. 8X,6F9.0
12TRP    75.00 75.00 75.00 75.00 75.00                         5X,5F6.2
1300SPED  820660. 1022734. 1084184. 1236062. 1573422. 1723562. 1873678. 8X,7F9.0
14SPE    50.00 50.00 50.00 50.00 50.00                         5X,5F6.2
1500CL2RR   3134551.  3109301.  3090840.  3072380.  3053719.  3035459. 9X,6F10.0
1601KIND     1401.  1440.  1464.  1448.  1494.                 10X,5F7.0
1602G1-6     8474.  8930.  9182.  9337.  9238.
1603G7-9     3690.  3889.  3987.  4046.  3990.
1604G10-12   1810.  2530.  2565.  2588.  2529.
1605VØCED     245.   250.   258.   263.   280.
1606AVTS       77.    77.    80.    80.    80.
1607SPCL      660.   660.   660.   660.   660.
1608AFDC      200.   225.   250.   275.   300.
```

*A standard card form, IBM electro 888157, is available for punching statements from this form

**Number of forms per pad may vary slightly

IBM FORTRAN Coding Form

GX28-7327-6 U/M 050**
Printed in U.S.A.

PROGRAM		PUNCHING INSTRUCTIONS	GRAPHIC
PROGRAMMER	DATE		PUNCH
PAGE 3 OF 5	CARD ELECTRO NUMBER*		

STATEMENT NUMBER | CONT | FORTRAN STATEMENT | IDENTIFICATION SEQUENCE

```
1609TØTAL  16557. 18001. 18446. 18697. 18541.

17FNR 400.00 400.00 400.00 400.00 400.00                      5X,5F7.2

18MILGR .01050 .01050 .01050 .01050 .01050                    7X,5F7.5

19MIN  75.00  75.00  75.00  75.00  75.00                      5X,5F7.2

20301  25.00  25.00  25.00  25.00  25.00                      5X,5F7.2

2100RTUITIØN-ØTHER PAYMTS     65000.    70000.     70000.    75000.       80000.
2100RSURPLUS APPRØPRIATED         0.        0.         0.         .           0.
2100RINTEREST ØN DEPØSITS      5392.     4500.      5000.     5000.        5000.
2100RREAL ESTATE SALES         5000.     5000.      1000.         .           0.
2100REQUIPMENT SALES           1000.     2000.      1000.         .           0.
2100RSALE ØF SUPPLIES/MAT     10000.     6000.         0.         .           0.
2100RRENTALS                  12000.    12000.     12000.    10000.       10000.
2100RMISCELLAEØUS RECEIPT     20000.    15000.     10000.     8000.        4000.
 21AB

2200RVØCATIØNAL DAY AID       50000.    50000.     50000.    50000.       50000.
2200RP.L. 374                     0.        0.         0.        0.           0.
2200RØTHER FEDERAL CE AID         0.        0.         0.        0.           0.
 22AB
```

*A standard card form, IBM electro 888157, is available for punching statements from this form

**Number of forms per pad may vary slightly

IBM

FORTRAN Coding Form

GX28-7327-6 U/M 050**
Printed in U.S.A.

PROGRAM

PROGRAMMER

DATE

PUNCHING INSTRUCTIONS: GRAPHIC / PUNCH

PAGE 4 OF 5

CARD ELECTRO NUMBER*

```
2300CESEA TITLE I PROJS      1090178.   1210368.   1375658.   1375000.   1000000.
2300CESEA TITLE III           212000.    150000.    100300.     50000.         0.
2300CMDTA                     100000.    150000.    187500.    200000.    200000.
2300CMODEL CITIES             300000.    500000.    750000.    800000.   1500000.
 23AN
2400SCERVN     238937.   238601.   266611.   272000.   287000.         10X,5F10.0
2500CEBUD 13248781. 15284680. 16547009. 18274587. 18768736. 1910[illegible]1. 9X,6F10.0
2600CAPUD  1483560.  1902178.  2260368.  2763458.  2825006.  3100001.  9X,6F10.0
27GVALU 30000.00 30000.00 30000.00 30000.00 30000.00                   7X,5F9.2
28IEMIN110.00110.00110.00110.00110.00                                  7X,5F6.2
29PAYPCT 40.00 40.00 40.00 40.00 40.00                                 8X,5F6.2
3000RFOREIGN BORN               5000.      5000.      5000.      5000.      5000.
3000RVOCATIONAL LAY [illegible]   50000.     50000.     50000.     50000. [illegible].
3000RADULT EDUCATION           12000.     12000.     12000.     12000.     12000.
3000RLAW ENFORCEMENT AID       87000.     85000.     85000.     85000.     85000.
3000RBUILDING AID              87737.     86601.    114611.    120000.    135000.
 30AB
```

*A standard card form, IBM electro 888157, is available for punching statements from this form

**Number of forms per pad may vary slightly

IBM

FORTRAN Coding Form

GX28-7327-6 U/M 050**
Printed in U.S.A.

PROGRAM		PUNCHING INSTRUCTIONS	GRAPHIC
PROGRAMMER	DATE		PUNCH
PAGE 5 OF 5	CARD ELECTRO NUMBER*		

*FORTRAN STATEMENT — IDENTIFICATION SEQUENCE

```
3100CPED PROJECTS             5000.     10000.    15000.    20000.    20000.
3100CMODEL CITIES  PROJS      15000.    15000.    20000.    20000.    20000.
 3IAN

3200FEASOPTO        0.0
```

*A standard card form, IBM electro 888157, is available for punching statements from this form

**Number of forms per pad may vary slightly

REVENUE SIMULATOR PROGRAM -
CARD INPUT - TYPES AND PURPOSES

Introduction

This chapter details data card preparation instructions for the Revenue Simulator Program. The purpose of each data card is presented followed by the input card preparation instructions.

The input cards are discussed in the order in which they are to appear in the card deck. Table III.4-d summarizes the identification and overall order of the input cards for the Revenue Simulator Program. Refer to Chart III.4-3 for a presentation in flow chart format of the recording steps for REVSIM data cards.

Procedure for estimating values of data elements input to REVSIM were discussed in the previous section. A review and understanding of the aforementioned procedures is necessary before the data input cards are prepared.

RUN CONTROL Card - Purpose

The RUN CONTROL card labels the data deck as either a base case run or an alternative case run, and inputs the date of the computer run. In addition, various subscript values, which define the looping in various computer program processes, and various option flags, which control the branching (order of execution) within the program, are input to REVSIM via the RUN CONTROL card.

Subscript values which control looping are:

Number of years in the planning horizon (set equal to 6-CC17) - e.g., sets number of years for which variable values read or written.

Number of student weight categories (CC18-19) - e.g., sets number of student weight categories to be read.

Number of years to be forecast (CC20-21) - set the number of times through a loop relative to forecasting values for each year of the planning period (equals 5).

The option flags include the following items which are explained under card entry information for CARD TYPE 01: Case Indicator, Alternative Case Current Expense Transportation Project Flag, Alternative Case Current Expense Special Education Project Flag, and the Incentive - Equalization Aid Option Flag.

The run date can be entered in any date format not to exceed twelve characters.

CARD TYPE 01 - RUN CONTROL CARD - FORMAT 4X,34A,I1,8I2
SAMPLE DATA ENTRY (BASE CASE)

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50	78		80
0	1	0	0	0	C	T	.	1	0	,		1	9	7	1	6		6		5		0		0		0		0		5		0																				

CARD COLUMN	DATA ENTRY
CC 1-2	CARD TYPE - 01.
CC 3-4	00 for base case or alternative case number.
CC 5-16	Date of the run.
CC 17	Number of years in planning horizon plus CY (usually equals 6).
CC 18-19	Number of student weight categories corresponding to the Incentive Equalization Aid classifications plus one (for totals), e.g. if school district enrollment is classified into 5 categories, then 06 is entered.
CC 20-21	Number of years to be forecast.
CC 22-23	Alternative Case Indicator. Enter 0 for base case or 1 for alternative case.
CC 24-25	Number of the alternative case. Enter the number identifier of the alternative case for which the revenue module is being run.
CC 26-27	Alternative Case Current Expense Transportation Project Flag. Enter 0 for base case run or alternative case run without a current expense transportation project. If alternative case has current expense transportation project enter 1.
CC 28-29	Alternative Case Current Expense Special Education Project Flag. Same as CC 26-27 except for Specia Education Project.

CARD COLUMN	DATA ENTRY
CC 30-31	Number of forecast years.
CC 32-33	Incentive - Equalization Aid Option Flag. Enter 1 if Incentive - Equalization is not to be calculated (computes only Present Aid) or 0 if Incentive - Equalization Aid is to be computed.

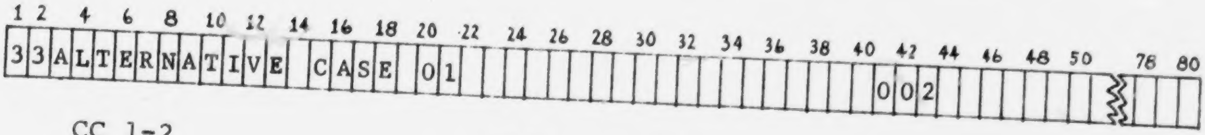
NOTE: If computer run is an alternative case run, prepare a card in CARD FORMAT Number 33, and as many input cards in format number 34 as appropriate, and insert these cards immediately following card format number 1. If the run is a base case run skip to card number 2 format.

ALTERNATIVE CASE PROJECT TOTAL Card - Purpose

The ALTERNATIVE CASE PROJECT Card is used to input a three character number representing the total number of projects included in the alternative case. The number of projects is used to set the maximum size of an array to store alternative case project titles.

The ALTERNATIVE CASE PROJECT TOTAL Card is mandatory for an Alternative case run.

CARD TYPE 33 - ALTERNATIVE CASE PROJECT CARD - FORMAT 40X,I3


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
33ALTERNATIVE CASE 01
002

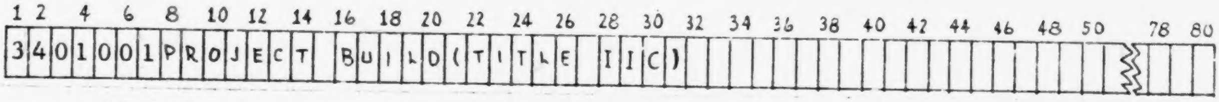
CC 1-2	CARD TYPE 33.
CC 3-40	Insert the card identifier ALTERNATIVE CASE NN, where NN is replaced by the actual alternative case number.
CC 41-43	Total number of identified projects plus program changes in the alternative case for which added revenues and costs have been identified.

ALTERNATIVE CASE PROJECT TITLE Card - Purpose

The ALTERNATIVE CASE PROJECT TITLE Card is used to input the name of an Alternative Case project. The complete set of project names is printed on a cover sheet for the alternative case reports to identify those projects in the Alternative Case.

A set of ALTERNATIVE CASE PROJECT TITLE CARDS is mandatory for an alternative case run.

CARD TYPE 34 - ALTERNATIVE CASE PROJECT TITLE CARD - FORMAT 7X, 8A4


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
34010001PROJECT BUILD(TITLE IIC)

CC 1-2	CARD TYPE 34.
CC 3-4	Enter the alternative case number applicable.
CC 5-7	Enter the number identifier of the project or program change.
CC 8-39	Name identifier of project or program change (Number in CC 5-7 of last project identifier cards must equal number in CC 41-43 of card format 32).

A control card in 1 format is prepared for Base Case and each alternative case.

ENROLLMENT TITLE Card - Purpose

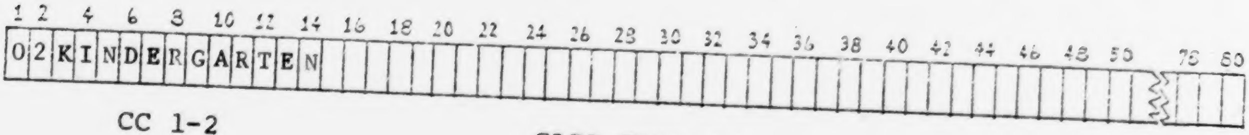
The ENROLLMENT TITLE Card is used to input the titles of the student weight categories, and are used as labels on an output report which concerns itself with enrollment forecast by student weight category.

An ENROLLMENT TITLE card is prepared for each student weight category selected by the district as an enrollment classification for purposes of calculating Incentive-Equalization Aid. In addition, an ENROLLMENT TITLE card is prepared with the title TOTAL ENROLLMENT for purposes of inputting this identifier and then using the label on output reports. The TOTAL ENROLLMENT card is always the last card in the set of ENROLLMENT TITLE cards. The total number of ENROLLMENT TITLE cards (including the TOTAL ENROLLMENT card) must equal the value entered in CC18-19 of the RUN CONTROL card.

The enrollment classifications currently listed in the Bateman Act are presented in Table III.4-e. These identifiers are in abbreviated form to conform to the 24 character restriction per enrollment classification indicated for CARD TYPE 02, and which must be used in this form in REVSIM.

A set of ENROLLMENT TITLE cards is mandatory.

CARD TYPE 02 - ENROLLMENT TITLE CARD - FORMAT 2x,6A4


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
0 2 K I N D E R G A R T E N

CC 1-2	CARD TYPE 02.
CC 3-26	Enrollment title (student weight category identifier).

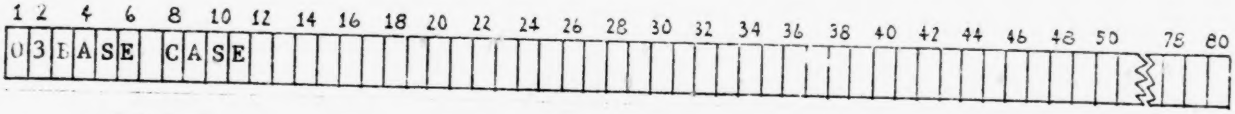
CASE TITLE Card - Purpose

The CASE TITLE Card inputs the case identifier and the type of report identifier. These identifiers serve to label the output reports as a BASE CASE or ALTERNATIVE CASE and as a REVENUE FORECAST or REVENUE FEASIBILITY report.

A CASE TITLE Card is prepared for each title listed in TABLE III.4-f.

A set of CASE TITLE cards are mandatory.

CARD TYPE 03 - CASE TITLE CARD - FORMAT 2x,6A4


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
0 3 B A S E C A S E

CC 1-2	CARD TYPE - 03.
CC 3-26	Case title.

YEAR TITLE Card - Purpose

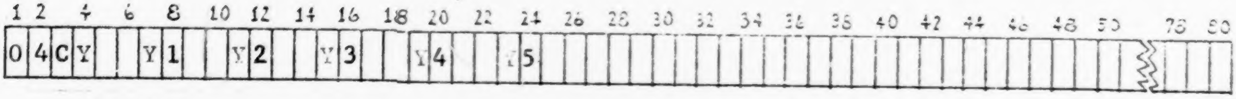
The YEAR TITLE Card is used to input the year identifiers for the years in the planning period and for the current year. The year identifiers are used to label various data fields on every output report of REVSIM.

The number of year identifiers must correspond to the numerical value in CC17 of the RUN CONTROL card.

Table III.4-f illustrates the year titles used in REVSIM.

A YEAR TITLE card is mandatory.

CARD TYPE 04 - YEAR TITLE CARD - FORMAT 2X,6A4


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
0 4 C Y
Y 1
Y 2
Y 3
Y 4
Y 5

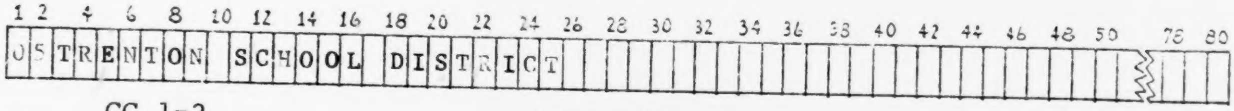
CC 1-2	CARD TYPE 04.
CC 3-6	Current year title.
CC 7-10	Forecast Year 1 title.
CC 11-14	Forecast year 2 title.
CC 15-18	Forecast year 3 title.
CC 19-22	Forecast year 4 title.
CC 23-26	Forecast year 5 title.

SCHOOL DISTRICT TITLE Card - Purpose

The SCHOOL DISTRICT TITLE card is used to input the name of the school district running REVSIM, and to label all output reports.

The SCHOOL DISTRICT TITLE card is mandatory for all runs.

CARD TYPE 05 SCHOOL DISTRICT TITLE CARD - FORMAT 2X,6A4


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
05TRENTON SCHOOL DISTRICT

CC 1-2	CARD TYPE - 05.
CC 3-26	School district name.

PUPIL WEIGHT Card - Purpose

The PUPIL WEIGHT card is used to input a pupil weight for each student weight category defined by an ENROLLMENT TITLE Card, with the exception of the TOTAL ENROLLMENT card. The student weights are used within the program to calculate weighted enrollment by student category.

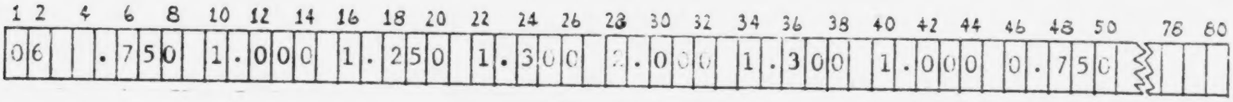
The student weights recorded on the PUPIL WEIGHT card must correspond in order to the ENROLLMENT TITLE cards, otherwise an invalid weight will be used to calculate weighted enrollment for a particular student category.

The number of student weight category entries on the PUPIL WEIGHT card must equal the difference between the value in CC 18-19 of the RUN CONTROL card minus 1.

Every student weight by student weight category, as defined by the Bateman Act, are listed in Table III.4-e, Part B and correspond in order to the categories in Table III.4-e, Part A

The PUPIL WEIGHT Card is mandatory for all runs.

CARD TYPE 06 - PUPIL WEIGHT CARD - FORMAT 2X,10F6.3


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
06
.750
1.000
1.250
1.300
2.000
1.300
1.000
0.750

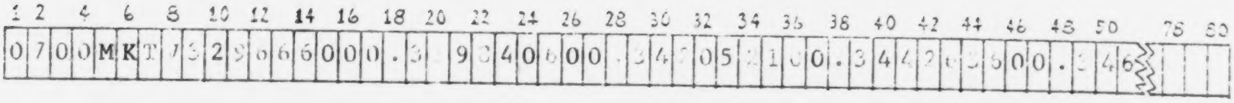
CC 1-2	CARD TYPE 06.
CC 3-8	Pupil weight for the first student weight category.
CC 9-14	Pupil weight for the second student weight category.
CC 15-20	Pupil weight for the third student weight category.
CC 21-26	Pupil weight for the fourth student weight category.
CC 27-32	Pupil weight for the fifth student weight category.
CC 33-38	Pupil weight for the sixth student weight category.
CC 39-44	Pupil weight for the seventh student weight category.
CC 45-50	Pupil weight for the eight student weight category.
CC 51-56	Pupil weight for the ninth student weight category.
CC 57-62	Pupil weight for the tenth student weight category.

MARKET VALUE OF PROPERTY Card - Purpose

The MARKET VALUE OF PROPERTY card is used to input the CY and Y1-Y5 projected market value of property in the school district taxed for school purposes.

The projected market value of property is then used as the basis for calculating estimated revenues from real estate taxes, and is used in the formulae for calculating the forecast of Present or Formula Aid and Incentive-Equalization Aid the school district might expect from the State.

CARD TYPE 07 - MARKET VALUE OF REAL ESTATE - FORMAT 8X,6F10.0



CC 1-2	CARD TYPE 07.
CC 3-4	Enter 00 for base case run or the alternative case number.
CC 5-8	Enter 'MKTV'.
CC 9-18	CY market value of real property (excluding class II RR property). Refer to the trend analysis computer program for instructions on data collection and calculating the information for card type 7.
CC 19-28	Y1 district real property market value.
CC 29-38	Y2 district real property market value.
CC 39-48	Y3 district real property market value.
CC 48-58	Y4 district real property market value.
CC 59-68	Y5 district real property market value.

Enter the decimal point in the right most character of each field.

ASSESSMENT RATIO Card - Purpose

The ASSESSMENT RATIO card is used to input actual CY and Y1-Y5 estimates of the assessment ratio. The assessment ratio is used in the projection of real estate tax revenues for calculating assessed valuation (product of market value times the assessment ratio).

CARD TYPE 08 - ASSESSMENT RATIO CARD - FORMAT 8x

```
1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50   75 80
0800ASSP .508 .508 .508 .508 .508 .508
```

CC 1-2	CARD TYPE 08.
CC 3-4	Enter 00 for base case run or the alternative case number.
CC 5-8	Enter ASSP.
CC 9-13	CY assessment ratio.
CC 14-18	Y1 assessment ratio.
CC 19-23	Y2 assessment ratio.
CC 24-28	Y3 assessment ratio.
CC 29-33	Y4 assessment ratio.
CC 34-38	Y5 assessment ratio.

REAL ESTATE TAX RATE Card - Purpose

The REAL ESTATE TAX RATE card is used to input CY and Y1-Y5 estimated real estate tax rate for school purposes.

The estimates of the real estate tax rate is used in the real estate tax projection calculation to compute real estate tax levied as the product of assessed or taxable valuation of property times the real estate tax rate.

CARD TYPE 09 - REAL ESTATE TAX CARD - FORMAT 8X,6F6.2

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50	78		80
0	9	0	0	R	E	T	X		5	4	.	9	0			0	.	0				0	.	0				0	.	0				0	.	0																

CC 1-2	CARD TYPE 09.
CC 3-4	Enter 00 for base case or the alternative case number.
CC 5- 8	Enter 'RETX'.
CC 9-14	CY Real estate tax rate in mills.
CC 15-20	Y1 real estate tax rate (to be calculated). Enter 0.00.
CC 21-26	Y2 real estate tax rate (to be calculated). Enter 0.00.
CC 27-32	Y3 real estate tax rate (to be calculated). Enter 0.00.
CC 33-38	Y4 real estate tax rate (to be calculated). Enter 0.00.
CC 39-44	Y5 real estate tax rate (to be calculated). Enter 0.00.

REAL ESTATE TAX COLLECTION PERCENT Card - Purpose

The REAL ESTATE TAX COLLECTION PERCENT card is used to input CY and Y1-Y5 estimated percent of taxes collected.

The estimates of the real estate tax collection percent is used in the real estate tax projection calculation to compute actual real estate tax revenues collected as the product of real estate taxes levied times the collection percent.

CARD TYPE 10 - R.E. TAX COLLECTION PERCENT CARD - FORMAT 8X,6F6.2

```
1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
1000C0LL 92.00 92.00 92.00 92.00 92.00 92.00
```

CC 1-2	CARD TYPE 10.
CC 3-4	Enter 00 for base case or the alternative case number.
CC 5-8	Enter COLL.
CC 9-14	CY real estate tax collection percent.
CC 15-20	Y1 real estate tax collection percent.
CC 21-26	Y2 real estate tax collection percent.
CC 27-32	Y3 real estate tax collection percent.
CC 33-38	Y4 real estate tax collection percent.
CC 39-44	Y5 real estate tax collection percent.

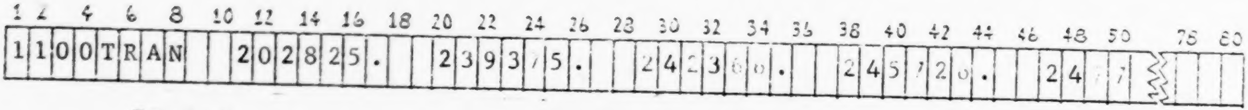
TRANSPORTATION PROGRAM COSTS Card - Purpose

The TRANSPORTATION PROGRAM COSTS Card is used to input the current year and Y1-Y5 Transportation Program costs. The computer program factors the annual estimated Transportation Program costs by a reinbursement percent, while also taking into account a one year time lag in payment, to calculate Y1-Y5 estimates of Transportation Aid. The Y1-Y5 Transportation Aid estimates are also used in the procedure for computing the equalized tax rate (as a percent) in the Incentive -Equalization Aid formula.

Transportation Aid is classified as a current expense revenue since it is used to finance the current expense operating budget.

The TRANSPORTATION PROGRAM COSTS card is mandatory.

CARD TYPE 11 - TRANSPORTATION PROGRAM COSTS - FORMAT 8x,6F8.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
1100TRAN
202825.
239375.
242360.
245720.
2477

CC 1-2	Enter the CARD TYPE 11.
CC 3-4	Enter 00 for a base case run, or the alternative case number.
CC 5-8	Enter the card identifier TRAN.
CC 9-17	CY Total transportation program costs.
CC 18-26	Y1 Total transportation program costs. Refer to the Resource Requirements Module, for further instructions on determining Y1-Y5 transportation program costs.
CC 27-35	Y2 Total transportation program costs.
CC 36-44	Y3 Total transportation program costs.
CC 45-53	Y4 Total transportation program costs.
CC 54-62	Y5 Total transportation program costs.

Note: Place a decimal point in the last card column of each cost field (CC 17, 26, 35, 44, 53, and 62).

TRANSPORTATION PROGRAM COSTS REIMBURSEMENT PERCENT Card - Purpose

The TRANSPORTATION PROGRAM COSTS REIMBURSEMENT PERCENT Card is used to input an annual reimbursement percent for each year in the planning period for the purpose of calculating annual estimated Transportation Aid.

The reimbursement percent is set by the State. However, school district administrators have the option of varying the reimbursement percent to simulate the impact of a particular revision.

The TRANSPORTATION PROGRAM COSTS REIMBURSEMENT PERCENT Card is mandatory.

CARD TYPE 12 - TRANSPORTATION PROGRAM COSTS REIMBURSEMENT PERCENT - FORMAT 5x,5F6.2

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50		78		80
1	2	T	R	P		7	5	.	0	0		7	5	.	0	0		7	5	.	0	0		7	5	.	0	0		7	5	.	0	0																			

CC 1-2	CARD TYPE 12.
CC 3-5	Enter identifier 'TRP' for identification purposes to denote Transportation program reimbursement percent input card.
CC 6-11	Y1 Transportation Program reimbursement percent (Provide two decimals places, e.g. 075.00.
CC 12-17	Y2 Transportation Program reimbursement percent.
CC 18-23	Y3 Transportation Program reimbursement percent.
CC 24-29	Y4 Transportation Program reimbursement percent.
CC 30-35	Y5 Transportation Program reimbursement percent.

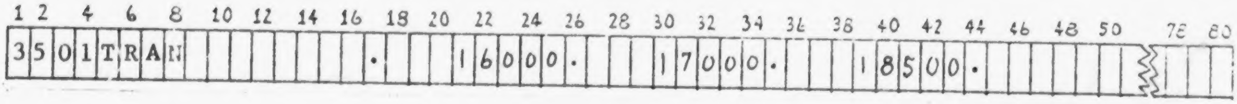
NOTE: If computer run is an alternative case which includes additional current expense transportation costs in the form of added project (or program changes), prepare a data card in format number 35, and insert in the input card deck immediately following card format number 12. If run is a base case or alternative case not affecting current expense transportation program costs, skip to card format number 13.

ADDED CURRENT EXPENSE TRANSPORTATION COSTS (ALTERNATIVE CASE) Card - Purpose

The ADDED CURRENT EXPENSE TRANSPORTATION COST Card is used to input added transportation costs as the result of a CURRENT expense transportation project included in the alternative case. The added costs are used to calculate the additional TRANSPORTATION AID that can be expected from the State to cover the additional costs.

The ADDED CURRENT EXPENSE TRANSPORTATION COSTS card is required only if the run is an alternative case run (CC22-23 of RUN CONTROL card equals 01) and the transportation flag indicator is on (CC 26-27 of RUN CONTROL card equals 01), i.e. a current expense transportation project is included in the project set.

CARD TYPE 35 - ALTERNATIVE CASE ADDED CURRENT EXPENSE TRANSPORTATION
COSTS - FORMAT 8x,5F9.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
3 5 0 1 T R A N
.
1 6 0 0 0 .
1 7 0 0 0 .
1 8 5 0 0 .

CC 1-2	CARD TYPE 35.
CC 3-4	Enter the alternative case number.
CC 5-8	Enter the mnemonic 'TRAN' for identification purposes to denote Transportation Program Costs.
CC 9-17	Y1 Added Alternative Case current expense transportation costs. Refer to the Resource Requirements Module, for further instructions on determining Y1-Y5 transportation program costs.
CC 18-26	Y2 Added Alternative Case CE transportation costs.
CC 27-35	Y3 Added Alternative Case CE transportation costs.
CC 36-44	Y4 Added Alternative Case CE transportation costs.
CC 45-53	Y5 Added Alternative Case CE transportation costs.

Note: Place a decimal point in the last card column of each cost field (CC 17, 26, 35, 44, and 53).

SPECIAL EDUCATION PROGRAM COSTS Card - Purpose

The SPECIAL EDUCATION PROGRAM Costs Card is used to input two years of past data (actuals) and Y1-Y5 estimates of Special Education Program costs. The computer program factors the annual cost figures by a reimbursement percent, while also taking into account a two year time lag in payment to calculate Y1-Y5 estimates of Special Education (ATYPICAL PUPIL) Aid. The Y1-Y5 Special Education Aid estimates are also used in the procedure for computing the equalized tax rate (as a percent) in the Incentive - Equalization Aid formula.

Special Education Aid is classified as a current expense revenue item since it is used to finance the district's current operating budget.

The SPECIAL EDUCATION PROGRAM COSTS Card is mandatory.

CARD TYPE 13 - SPECIAL EDUCATION PROGRAM COSTS - FORMAT 8X,7F9.0

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50	76		80
1	3	0	0	S	P	E	D			8	2	0	6	6	0	.		1	0	2	2	7	3	4	.		1	0	8	4	1	8	4	.		1	2	3	6	0	6	2	.									

CC 1-2	CARD TYPE 13.
CC 3-4	Enter 00 for base case, or the alternative case number.
CC 5-8	Enter the card identifier 'SPED'.
CC 9-17	CY-1 Special Education Program costs
CC 18-26	CY Special Education Program costs.
CC 27-35	Y1 Total base case current expense Special Education program costs. Refer to the Resource Requirements Users Manual, for instructions on determining Y1-Y5 base case current expense Special Education Program Costs.
CC 36-44	Y2 Total base case current expense Special Education program costs.
CC 45-53	Y3 Total base case current expense Special Education program costs.
CC 54-62	Y4 Total base case current expense Speial Education program costs.
CC 63-71	Y5 Total base case current expense Special Education program costs.

SPECIAL EDUCATION AID REIMBURSEMENT PERCENT Card - Purpose

The SPECIAL EDUCATION AID REIMBURSEMENT PERCENT Card is used to input an annual reimbursement percent for each year in the planning period for the purpose of calculating Y1-Y5 estimates of Special Education Aid.

The reimbursement percent is a policy rate set by the State. However, administrators have the option of varying the reimbursement percent to simulate the impact of a particular revision.

The SPECIAL EDUCATION AID REIMBURSEMENT PERCENT Card is mandatory.

CARD TYPE 14 - SPECIAL EDUCATION PROGRAM COSTS REIMBURSEMENT PERCENT - FORMAT 5x,5F6.2

```
1 2   4   6   8   10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50      78  80
1 4 S P E   5 0 . 0 0   5 0 . 0 0   5 0 . 0 0   5 0 . 0 0   5 0 . 0 0
```

CC 1-2	CARD TYPE 14.
CC 3-5	Enter mnemonic 'SPE' for user identification purposes to identify Special Education program reimbursement percent input card.
CC 6-11	Y1 Special Education Aid reimbursement percent (Enter percent with two decimals, e.g., 150.00).
CC 12-17	Y2 Special Education Aid reimbursement percent.
CC 18-23	Y3 Special Education Aid reimbursement percent.
CC 24-29	Y4 Special Education Aid reimbursement percent.
CC 30-35	Y5 Special Education Aid reimbursement percent.

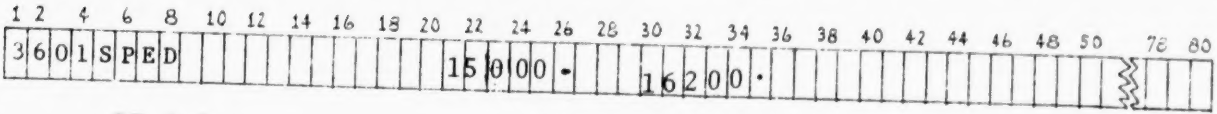
NOTE: If computer run is an alternative case which includes additional current expense special education costs reflected by new projects or program changes or both, prepare a data card in card number 36 format, and insert this card in the input card deck immediately following card format 14 (Atypical Pupil Aid Reimbursement Percent). If the run is a base case or alternative case not affecting current expense special education program costs, skip to card number 15 format.

ADDED CURRENT EXPENSE SPECIAL EDUCATION COSTS Card - Purpose

The ADDED CURRENT EXPENSE SPECIAL EDUCATION COSTS Card is used to input added special education costs as the result of a current expense special education project included in the alternative case. The added costs are used to calculate the additional ATYPICAL PUPIL AID that can be expected from the State to cover the added Special Education costs.

The ADDED CURRENT EXPENSE SPECIAL EDUCATION Card is required only if the run is an alternative case run (CC 22-23 of the RUN CONTROL card equals 01) and the special education flag (CC 28-29 of the RUN CONTROL card equals 01) is on, i.e. a current expense Special Education project is included in the project set.

CARD TYPE 36 - ALTERNATIVE CASE ADDED CURRENT EXPENSE SPECIAL EDUCATION PROGRAM COSTS - FORMAT 8x,5F9.0



CC 1-2	CARD TYPE 36.
CC 3-4	Enter the alternative Case number.
CC 5-8	Enter the mnemonic 'SPED' for identification purposes to denote an input card for special education program costs.
CC 9-17	Blank
CC 18-26	Y1 Alternative Case added current expense Special Education program costs. Refer to the Resource Requirements Users Manual, for instructions on determining Y1-Y5 alternative case current expense Special Education costs.
CC 27-35	Y2 added current expense Special Education program costs for the Alternative Case.
CC 36-44	Y3 added current expense Special Education program costs for the alternative Case.
CC 45-53	Y4 added current expense Special Education program costs for the alternative case.
CC 54-62	Y5 added current expense Special Education program costs for the alternative case.

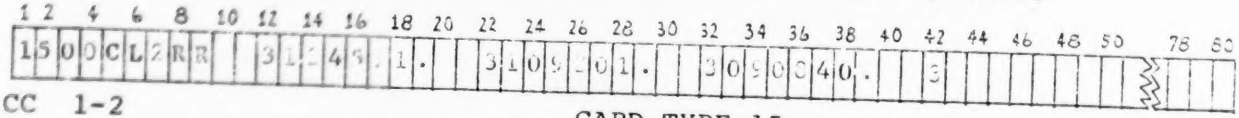
Note: Place decimal point in last card column of each cost field (CC 17, 26, 35, 44, and 53).

CLASS II RAILROAD PROPERTY Card - Purpose

The CLASS II RAILROAD PROPERTY card is used to input CY and Y1-Y5 market value of Class II Railroad Property. Y1-Y5 total district market value of property is calculated as the sum of Class II Railroad Property plus the market value of real estate (CARD TYPE 07). The Y1-Y5 total figure is used as one of the factors in calculating State Aid.

The CLASS II RAILROAD PROPERTY CARD is mandatory.

CARD TYPE 15 - CLASS II RAILROAD PROPERTY - FORMAT 9X,6F10.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
1 5 0 0 C L 2 R R
3 1 2 4 5 . 1 .
3 1 0 9 2 0 1 .
3 0 9 0 0 4 0 .
3

CC 1-2	CARD TYPE 15.
CC 3-4	Base Case is 00 or Alternative Case number.
CC 5-9	Enter 'CL2RR'
CC 10-19	CY market value of Class II Railroad Property.
CC 20-29	Y1 market value of Class II Railroad Property.
CC 30-39	Y2 market value of Class II Railroad Property.
CC 40-49	Y3 market value of Class II Railroad Property.
CC 50-59	Y4 market value of Class II Railroad Property.
CC 60-69	Y5 market value of Class II Railroad Property.

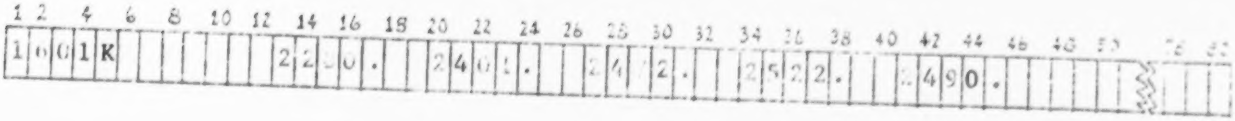
ENROLLMENT FORECAST Card - Purpose

The set of ENROLLMENT FORECAST data cards is used to input Y1-Y5 enrollment estimates by student weight category, and Y1-Y5 total enrollment estimates. The enrollment data is used to calculate the Y1-Y5 Foundation Program amounts and to compute weighted enrollment for use in the Incentive Equalization Aid formula.

The number of input cards in the ENROLLMENT FORECAST data deck must equal the number of enrollment classifications indicated in CC 18-19 of the RUN CONTROL card.

The set of ENROLLMENT FORECAST data cards is mandatory.

CARD TYPE 16 - ENROLLMENT DATA (BY STUDENT WEIGHT CATEGORY) - FORMAT 10X,5F7.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
1601K
2250.
2401.
2472.
2522.
2490.

CC 1-2	CARD TYPE 16.
CC 3-4	Number denoting order of the data card in the set of enrollment data input cards.
CC 5-10	Student weight category identifier abbreviation.
CC 11-17	CY enrollment.
CC 18-24	Y1 enrollment for a student weight category.
CC 25-31	Y2 enrollment for a student weight category.
CC 32-38	Y3 enrollment for a student weight category.
CC 39-45	Y4 enrollment for a student weight category.

FOUNDATION RATE PER PUPIL Card - Purpose

The FOUNDATION RATE PER PUPIL card is used to input the Y1-Y5 estimates of the foundation rate per pupil. The foundation rate is applied to annual total resident enrollment for each year of the planning period to obtain the foundation program amount.

The user has the option of using the current State established policy rate or some other estimated rate to simulate the impact of a rate change on expected revenue in the form of Formula Aid and Incentive Equalization Aid from the State.

The FOUNDATION RATE PER PUPIL CARD is mandatory.

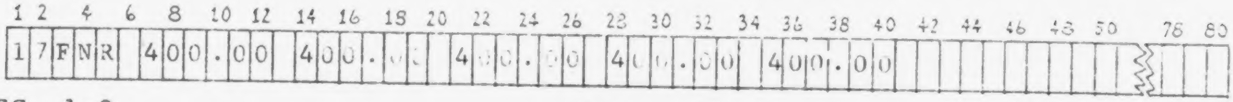
FOUNDATION RATE PER PUPIL Card - Purpose

The FOUNDATION RATE PER PUPIL card is used to input the Y1-Y5 estimates of the foundation rate per pupil. The foundation rate is applied to annual total resident enrollment for each year of the planning period to obtain the foundation program amount.

The user has the option of using the current State established policy rate or some other estimated rate to simulate the impact of a rate change on expected revenue in the form of Formula Aid and Incentive Equalization Aid from the State.

The FOUNDATION RATE PER PUPIL CARD is mandatory.

CARD TYPE 17 - FOUNDATION RATE PER PUPIL - FORMAT 5X,5F7.2


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80

```
17FNR 400.00 400.00 400.00 400.00 400.00
```

CC 1-2	CARD TYPE 17.
CC 3-5	Enter 'FNR' for user identification purposes to denote foundation rate per pupil.
CC 6-12	Y1 foundation rate per resident pupil.
CC 13-19	Y2 foundation rate per resident pupil.
CC 20-26	Y3 foundation rate per resident pupil.
CC 27-33	Y4 foundation rate per resident pupil.
CC 34-40	Y5 foundation rate per resident pupil.

MILLAGE RATE Card - Purpose

The MILLAGE RATE Card is used to input the Y1-Y5 millage rate. The millage rate is used in the Formula Aid calculation to compute an annual local fair share estimate (product of market value times millage rate).

The user has the option of inputting for Y1-Y5 the current State established millage rate (by assuming the rate will not change) or revised Y1-Y5 rates to simulate the impact on expected revenues of a millage rate change in combination with changes of other variables in the formula for Formula Aid.

The MILLAGE RATE card is mandatory.

CARD TYPE 18 - MILLAGE RATE - FORMAT 7X,5F7.5

```
1   5    10   15   20   25   30   35   40
18MILGR0.01050 .01050 .01050 .01050 .01050
```

CC 1-2	CARD TYPE 18.
CC 3-7	Enter 'MILER' for user identification purposes to denote millage used in local fair share calculation.
CC 8-14	Y1 millage rate.
CC 15-21	Y2 millage rate.
CC 22-28	Y3 millage rate.
CC 29-35	Y4 millage rate.
CC 36-42	Y5 millage rate.

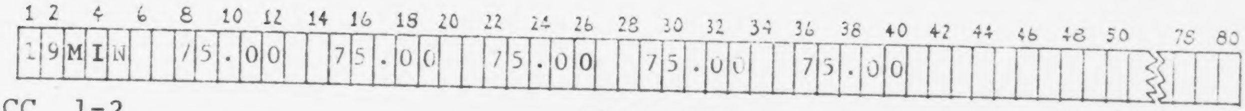
MINIMUM AID RATE Card - Purpose

The MINIMUM AID RATE card is used to input the Y1-Y5 minimum aid rate per pupil estimates. The minimum aid rate is applied against Y1-Y5 enrollment estimates to obtain Y1-Y5 Minimum Aid amounts.

The user has the option to input for Y1-Y5 the current State minimum aid rate or revised Y1-Y5 rates to simulate the impact on expected revenues of a minimum aid rate change in combination with changes of other variables in the formula for Formula Aid.

The MINIMUM AID RATES Card is mandatory.

CARD TYPE 19 - MINIMUM AID RATE (FOR FORMULA AID) - FORMAT 5X,5F7.2


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
1 9 M I N
7 5 . 0 0
7 5 . 0 0
7 5 . 0 0
7 5 . 0 0
7 5 . 0 0

CC 1-2	CARD TYPE 19.
CC 3-5	Enter 'MIN' for user identification to denote minimum aid rate per student for Formula Aid.
CC 6-12	Y1 minimum aid rate per pupil.
CC 13-19	Y2 minimum aid rate per pupil.
CC 20-26	Y3 minimum aid rate per pupil.
CC 27-33	Y4 minimum aid rate per pupil.
CC 34-40	Y5 minimum aid rate per pupil.

CH301 AID RATE Card - Purpose

The CH301 AID RATE card is used to input the Y1-Y5 estimates of the CH 301 aid rate per student. The CH 301 Aid Rate is applied to Y1-Y5 total enrollment to compute Y1-Y5 CH301 Aid.

The user has the option to input for Y1-Y5 the current State CH301 aid rate or revised Y1-Y5 rates to simulate the impact on expected revenues of a CH301 aid rate change in combination with changes of other variables in the Formula Aid calculation.

The CH301 AID RATE Card is mandatory.

CARD TYPE 20 - CH301 AID RATE - FORMAT 5X,5F7.2

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50		75		80
2	0	3	0	1			2	5	.	0	0			2	5	.	0	0			2	5	.	0	0			2	5	.	0	0			2	5	.	0	0											≀			

CC 1-2	CARD TYPE 20.
CC 3-5	Enter '301' for user identification purposes to denote CH301, L.1968 aid rate per student data input card.
CC 6-12	Y1 CH301 aid rate per student.
CC 13-19	Y2 CH301 aid rate per student.
CC 20-26	Y3 CH301 aid rate per student.
CC 27-33	Y4 CH301 aid rate per student.
CC 34-40	Y5 CH301 aid rate per student.

LOCAL CURRENT EXPENSE REVENUE ITEM Card - Purpose

The LOCAL CURRENT EXPENSE REVENUE ITEM card is used to input the title of the local revenue source and Y1-Y5 estimated revenues from the source. All local sources are assumed to be current expense revenues to be applied against the operating budget. One card is input for each local source for which revenues are identified. Revenues from the real estate tax are included as a local revenue for purposes of this input card. Table III.4-g suggests several revenue sources which are local in nature.

The estimated Y1-Y5 total revenues from local sources are used in the Incentive-Equalization Aid formula for computing an equalized tax rate (percent).

A set of LOCAL CURRENT EXPENSE REVENUE ITEM cards is optional relative to the running of the REVSIM program. However, if local revenues are not estimated and a set is not input, revenues from local sources (excluding real estate tax revenues) will be zero, thereby having a direct effect on the district's Y1-Y5 equalized tax rate as well as the local real estate tax rate as calculated during the revenue feasibility portion of the program.

CARD TYPE 21 - Y1-Y5 REVENUE ITEMS FROM LOCAL CURRENT EXPENSE SOURCES FORMAT 4x,A1,5A4,5F,11.0

1	2		4		6		8		10		12		14		16		18		20		22		24		26		28		30		32		34		36		38		40		42		44		46		48		50			78		80
2	1	0	0	R	T	U	I	T	I	O	N	-	O	T	H	E	R		P	A	Y	M	T	S						4	8	6	8	5	.						5	4	6	7	1	.					⌇	7	8	.

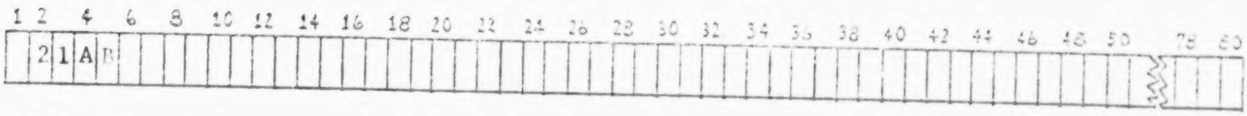
CC 1-2	CARD TYPE 21.
CC 3-4	Base case is 00 or alternative number.
CC 5	R to identify a current expense local revenue item.
CC 6-25	Name identifier of current expense local revenue item.
CC 26-36	Y1 expected current expense revenue from local funding source identified in CC 2-25.
CC 37-47	Y2 expected current expense revenue from local funding source identified in CC 2-25.
CC 48-58	Y3 expected current expense revenue from local funding source identified in CC 2-25.
CC 59-69	Y4 expected current expense revenue from local funding source identified in CC 2-25.
CC 70-80	Y5 expected current expense revenue from local funding source identified in CC 2-25.

END Card (for LOCAL CURRENT EXPENSE REVENUE ITEMS) - Purpose

The END card is used to identify the end of the data input deck consisting of estimates of revenue items from local current expense funding sources.

The END card following the local current expense revenue items data deck is mandatory.

CARD TYPE 21A - END CARD (LOCAL CURRENT EXPENSE REVENUE ITEMS) - FORMAT 4x,A1


1
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
78
80
2
1
A
B

CC 1-4	CARD TYPE 21A.
CC 5	Enter B (the remainder of the card is blank). This card is placed after the last local revenue item data input card to signal the end of the card deck.

CARD TYPE 21A is mandatory.

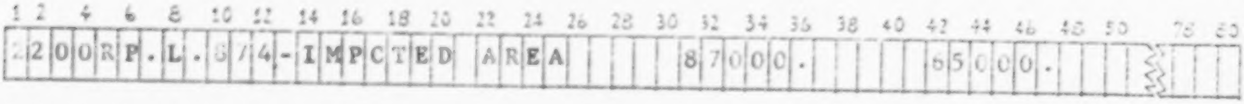
FEDERAL CURRENT EXPENSE REVENUE ITEM Card - Purpose

The FEDERAL CURRENT EXPENSE REVENUE ITEM card is used to input the title of and Y1-Y5 estimated revenues from Federal current expense sources. One card is input for each Federal current expense source for which revenues are estimated.

The estimated Y1-Y5 total revenues from Federal current expense sources are used in the Incentive-Equalization Aid formula for computing an equalized school district tax rate (percent).

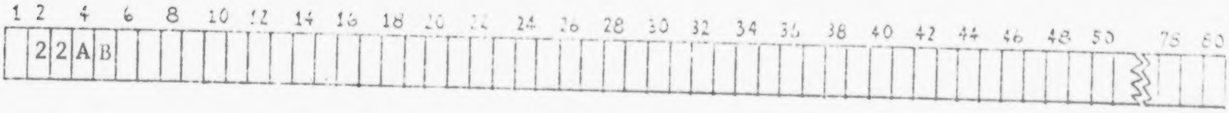
A set of FEDERAL CURRENT EXPENSE REVENUE ITEM cards is optional. However, zero estimates will be reflected in the values calculated for the district's Y1-Y5 equalized tax rate (used in the Incentive-Equalization Aid formula) and in the district's real estate tax rate required to cover any revenue deficits.

CARD TYPE 22 - Y1-Y5 REVENUE ITEMS FROM FEDERAL CURRENT EXPENSE SOURCES - FORMAT 4x,A1,5A4,5F11.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
2200RP.L.874-IMPCTED AREA
87000.
65000.

CC 1-2	CARD TYPE 22.
CC 3-4	Base case is 00 or the alternative case number.
CC 5	Enter R to identify a current expense revenue item.
CC 6-25	Name identifier of current expense federal revenue item.
CC 26-36	Y1 expected current expense revenues from federal funding source identified in CC 2-25.
CC 37-47	Y2 expected current expense revenues from federal funding source identified in CC 2-25.
CC 48-58	Y3 expected current expense revenues from federal funding source identified in CC 2-25.
CC 59-69	Y4 expected current expense revenues from federal funding source identified in CC 2-25.
CC 70-80	Y5 expected current expense revenues from federal funding source identified in CC 2-25.

CARD TYPE 22A - END Card For (FEDERAL CURRENT EXPENSE REVENUE ITEMS DATA DECK) - FORMAT 4x,A1


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
2 2 A B

CC 1-4	CARD TYPE 22A.
CC 5	Enter B (the remainder of the card is blank). This card is placed after the last federal current expense revenue item input card. This card signals the end of data input cards of federal current expense revenue items.

CARD TYPE 22A is mandatory.

END Card (for FEDERAL CURRENT EXPENSE REVENUE ITEMS DATA DECK)-Purpose

The END card is used to identify the end of the data deck consisting of estimates of revenue items from federal current expense funding sources.

The END card is mandatory, and is required whether or not there is a set of federal current expense revenue item data cards. The END card follows the last input card in the set, when federal current expense revenue input cards are present, or CARD TYPE 21A, if not estimated.

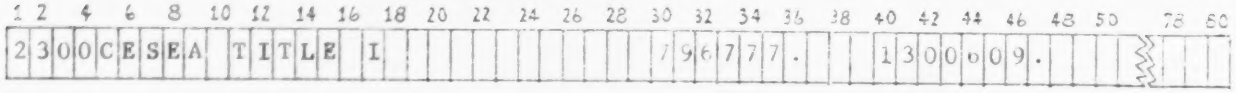
FEDERAL CATEGORICAL REVENUE ITEM Card - Purpose

The FEDERAL CATEGORICAL REVENUE ITEM card is used to input the title of an the estimated Y1-Y5 revenues from Federal categorical sources, i.e. Federal funds which are received based on federally approved funding applications for carrying out specific projects and their objectives, and which legally cannot be used to defray the costs of the district's continuing, on-going program (as detailed in the current expense budget).

The estimated Y1-Y5 total revenues from Federal categorical sources are used to determine revenue feasibility of non-current expense (categorical) costs.

A set of FEDERAL CATEGORICAL REVENUE ITEM cards is optional relative to the running of the REVSIM computer program.

CARD TYPE 23 - Y1-Y5 REVENUE ITEMS FROM FEDERAL CATEGORICAL
SOURCES - FORMAT 4x,A1,5A4,5F11.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
2 3 0 0 C E S E A T I T L E I
7 9 6 7 7 7 .
1 3 0 0 0 0 9 .

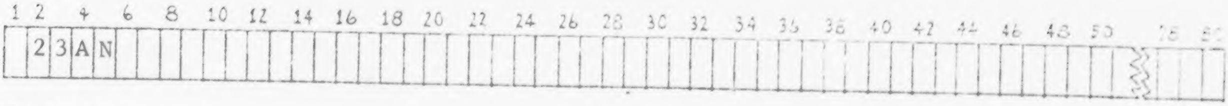
CC 1-2	CARD TYPE 23.
CC 3-4	Base case is 00 or alternative case number.
CC 5	Enter C to identify the revenue item data card as a categorical revenue item.
CC 6-25	Name identifier of categorical federal revenue item.
CC 26-36	Y1 expected categorical revenues from federal funding source identified in CC 2-25.
CC 37-47	Y2 expected categorical revenues from federal funding source identified in CC 2-25.
CC 48-58	Y3 expected categorical revenues from federal funding source identified in CC 2-25.
CC 59-69	Y4 expected categorical revenues from federal funding source identified in CC 2-25.
CC 70-80	Y5 expected categorical revenues from federal funding source identified in CC 2-25.

END Card (for FEDERAL CATEGORICAL REVENUE ITEMS)- Purpose

The END card is used to identify the end of the data input deck consisting of estimates of revenue items from federal categorical funding sources.

The END card is mandatory, and is required whether or not there is a set of federal categorical revenues item data cards. The END card follows the last input card in the set, when federal categorical expense revenue input cards are present, or CARD TYPE 22A, if federal categorical revenue cards are not input.

CARD TYPE 23A - END CARD (FOR FEDERAL CATEGORICAL REVENUE ITEMS DATA DECK) - FORMAT 4x,A1


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
2 3 A N

CC 1-4	CARD TYPE 23A.
CC 5	Enter N (remainder of the card is blank). This card is placed after the last input card in the deck of cards comprising categorical revenue items from federal sources. This card signals the end of the data input card deck of federal categorical revenue items.

TOTAL OTHER CURRENT EXPENSE REVENUES FROM OTHER STATE SOURCES Card Purpose

A TOTAL OTHER CURRENT EXPENSE REVENUES FROM STATE SOURCES card is used to input the estimated Y1-Y5 aggregated amount of current expense revenues from State sources, excluding revenues from Transportation Aid, Atypical Pupil Aid, and Incentive-Equalization Aid. The Y1-Y5 aggregated revenues must equal the estimated revenues summed by year over the set if Y1-Y5 REVENUE ITEMS FROM STATE CURRENT EXPENSE SOURCES cards (CARD TYPE 30).

The estimated Y1-Y5 total other current expense revenues from State sources is used in the Incentive-Equalization Aid formula for computing an equalized tax rate for the district.

A TOTAL OTHER CURRENT EXPENSE REVENUES FROM STATE SOURCES card is mandatory (if Y1-Y5 estimates are zero, enter on the card).

CARD TYPE 24 - TOTAL OTHER CURRENT EXPENSE REVENUES FROM STATE SOURCES - FORMAT 10x,5F10.0

```
1 2  4  6  8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50    78  80
2400SCERVN   248000.   302000.   322500.
```

CC 1-2	CARD TYPE 24.
CC 3-4	Enter 00 for a base case run, on the alternative case number.
CC 5-10	Enter the card identifier 'SCERVN'.
CC 11-20	Y1 current expense revenues from State sources (excludes Atypical Pupil Aid, Transportation Aid, and Incentive-Equalization Aid).
CC 21-30	Y2 current expense revenues from State sources.
CC 31-40	Y3 current expense revenues from State sources.
CC 41-50	Y4 current expense revenues from State sources.
CC 51-60	Y5 current expense revenues from State sources.

ESTIMATED CURRENT EXPENSE BUDGET FORECAST Card - Purpose

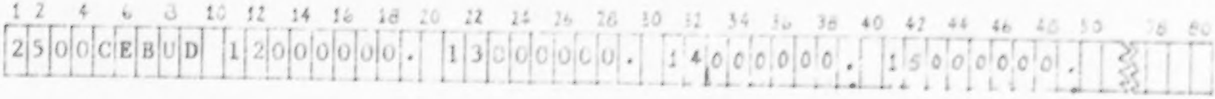
The ESTIMATED CURRENT EXPENSE BUDGET FORECAST card is used to input the Y1-Y5 estimated operating costs of the school district's program (base case program or alternative case program as appropriate).

The Y1-Y5 estimated operating expenses are used in the Incentive-Equalization Aid formula for computing the school district's equalized tax rate.

The user has the option of estimating any magnitude of costs in order to simulate the effect on revenue feasibility during the planning period.

A CURRENT EXPENSE BUDGET FORECAST Card is mandatory.

CARD TYPE 25 - Y1-Y5 CURRENT EXPENSE BUDGET - FORMAT 9x,6F10.0


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
2500CEBUD
12000000.
13000000.
14000000.
15000000.

CC 1-2	CARD TYPE 25.
CC 3-4	Enter 00 for a base case, on the alternative case number.
CC 5-9	Enter the card identifier 'CEBUD.'
CC 10-19	CY current expense operating budget.
CC 20-29	Y1 current expense operating buget. Refer to the Resource Requirements Manual for procedures for calculating Y1-Y5 total current expense program costs.
CC 30-39	Y2 current expense operating budget.
CC 40-49	Y3 current expense operating budget.
CC 50-59	Y4 current expense operating budget.
CC 60-69	Y5 current expense operating budget.

ESTIMATED CATEGORICAL BUDGET FORECAST Card - Purpose

The ESTIMATED CATEGORICAL BUDGET FORECAST Card is used to input the Y1-Y5 estimated categorical (non-current) expenses of the school district's program.

NOTE: Complete CARD TYPE 26. If Incentive-Equalization Aid is not to be calculated (IBFLAG = 1), skip to CARD TYPE 30, otherwise continue with CARD TYPE 27.

CARD TYPE 26 - Y1-Y5 CATEGORICAL EXPENSE BUDGET - FORMAT 9x,6F10.0

```
1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50  76 80
2600CABUD  1304755.  1618374.  2189865.  2162375.
```

CC 1-2	CARD TYPE 26.
CC 3-4	Enter 00 for a base case run or the alternative case number.
CC 5-9	Enter the card identifier 'CABUD.'
CC 10-19	CY categorical operating budget.
CC 20-29	Y1 categorical expense operating budget. Refer to the Resource Requirements Manual for procedures for calculating Y1-Y5 total categorical program costs.
CC 30-39	Y2 categorical expense operating budget.
CC 40-49	Y3 categorical expense operating budget.
CC 50-59	Y4 categorical expense operating budget.
CC 60-69	Y5 categorical expense operating budget.

GUARANTEED VALUATION PER WEIGHTED PUPIL Card - Purpose

The GUARANTEED VALUATION PER WEIGHTED PUPIL card is used to input the estimated Y1-Y5 guaranteed valuation per weighted pupil based upon the district's classification assumption. The guaranteed valuation rate is used in the Incentive-Equalization Aid calculation to compute total guaranteed valuations (product of weighted enrollment times guaranteed valuation rate).

The district has the option of assuming no change in its current classification, thereby using the current rate for that classification, or it can assume some movement up the classification ladder during the planning period and use the corresponding guaranteed valuation rate. Table III.4-j lists the current schedule of Guaranteed Valuation per Weighted Pupil by district classification.

The GUARANTEED VALUATION PER WEIGHTED PUPIL Card is mandatory.

CARD TYPE 27 - GUARANTEED VALUATION PER WEIGHTED PUPIL - FORMAT 7x,5F9.2

```
1 2   4   6   8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50    78  80
2 7 G V A L U   3 0 0 0 0 . 0 0   3 0 0 0 0 . 0 0   3 0 0 0 0 . 0 0   3 0 0 0 0 . 0 0   3 0 0 0 0 .
```

CC 1-2	CARD TYPE 27.
CC 3-7	Enter card identifier 'GVALU' as an English language card identifier.
CC 8-16	Y1 guaranteed valuation per weighted pupil.
CC 17-25	Y2 guaranteed valuation per weighted pupil.
CC 26-34	Y3 guaranteed valuation per weighted pupil.
CC 35-43	Y4 guaranteed valuation per weighted pupil.
CC 44-52	Y5 guaranteed valuation per weighted pupil.

MINIMUM SUPPORT AID POLICY RATE Card - Purpose

The MINIMUM SUPPORT AID POLICY RATE Card is used to input the estimated Y1-Y5 minimum support aid rate. The minimum support rate is used in the Incentive-Equalization Aid calculation to compute Incentive-Equalization Minimum Support (weighted enrollment times minimum support rate per weighted pupil).

The user has the option of inputting for Y1-Y5 the district's current minimum support rate (assuming district classification will not change) or revised Y1-Y5 rates (based upon changing classification assumption during the planning period) to simulate the impact on expected revenues (especially State Aid) of a minimum support aid rate change in combination with variation of other variables in the Incentive-Equalization aid formula. Table III-4 lists current Minimum Support Rates Per Weighted Pupil by district classification.

The MINIMUM SUPPORT AID POLICY RATE Card is mandatory.

CARD TYPE 28 - MINIMUM SUPPORT AID POLICY RATE PER WEIGHTED PUPIL - FORMAT 7x,5F9.2

```
1 2   4   6   8   10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50   76  80
|2|8|I|E|M|I|N|1|1|0|.|0|0|1|1|0|.|0|0|1|1|0|.|0|0|1|1|0|.|0|0|1|1|0|.| | | | | | | | | | | | | | | | | |~| | | | |
```

CC 1-2	CARD TYPE 28.
CC 3-7	Enter card identifier 'IEMIN' as an English language card name for easy user identification.
CC 8-16	Y1 minimum support aid policy rate per weight pupil.
CC 17-25	Y2 minimum support aid policy rate per weight pupil.
CC 26-34	Y3 minimum support aid policy rate per weight pupil.
CC 35-43	Y4 minimum support aid policy rate per weight pupil.
CC 44-52	Y5 minimum support aid policy rate per weight pupil.

INCENTIVE-EQUALIZATION AID PAYMENT PERCENT Card - Purpose

The Incentive-Equalization Aid Payment card is used to input the Y1-Y5 estimate of the State payment percent for Incentive-Equalization Aid.

The user has the option of inputting for Y1-Y5 current State payment percent (assuming the rate will not change) or revised Y1-Y5 rates to simulate the impact on expected revenues and revenue feasibility of a change in payment percent with changes in the values of other sensitive variables in the Incentive-Equalization Aid formula.

The PAYMENT PERCENT card is mandatory.

CARD TYPE 29 - INCENTIVE-EQUALIZATION AID PAYMENT PERCENT - FORMAT 8x,5F6.2

```
1 2   4   6   8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50   76  80
2 9 P A Y P C T   2 0 . 0 0   2 0 . 0 0   2 0 . 0 0   2 0 . 0 0   2 0 . 0 0
```

cc 1-2	CARD TYPE 29.
cc 3-8	Enter card identifier PAYPCT as an English language card name for easy user identification.
cc 9-14	Y1 State policy payment percent for Incentive-Equalization Aid.
cc 15-20	Y2 State policy payment percent for Incentive-Equalization Aid.
cc 21-26	Y3 State policy payment percent for Incentive-Equalization Aid.
cc 27-32	Y4 State policy payment percent for Incentive-Equalization Aid.
cc 33-38	Y5 State policy payment percent for Incentive-Equalization Aid.

STATE CURRENT EXPENSE REVENUE ITEM Card - Purpose

The STATE CURRENT EXPENSE REVENUE ITEM card is used to input the title of and the Y1-Y5 estimated revenues from State current expense sources. One card is input for each State current expense source for which revenues are estimated. Table III.4-i suggests several current expense revenues items from the State.

The sum of estimated Y1-Y5 revenues indicated on the set of STATE CURRENT EXPENSE REVENUE ITEM cards must equal the totals by year annotated for the TOTAL OTHER CURRENT EXPENSE REVENUES FROM STATE SOURCES card (Card Type 23).

The estimated Y1-Y5 total other revenues from State current expense sources are used in the Incentive-Equalization Aid formula for computing an equalized school district tax rate (percent).

A set of STATE CURRENT EXPENSE REVENUE ITEM cards is optional relative to running the REVSIM computer program.

CARD TYPE 30 - Y1-Y5 REVENUE ITEMS FROM STATE CURRENT EXPENSE SOURCES - FORMAT 4x,A1,5A4,5F11.0

```
1 2  4  6  8  10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50   78 80
3000RLAW ENFØRCEMENT AID     840 00.     85000.
```

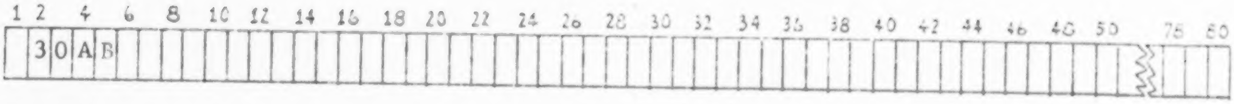
cc 1-2	CARD TYPE 30.
cc 3-4	Base case is 00 or alternative case number. Enter R to identify the data card as a current expense revenue item.
cc 5	Enter R to identify the data card as a current expense revenue item.
cc 6-25	Name identifier of the revenue item from a State current expense source.
cc 26-36	Y1 expected current expense revenues from the State source identified in cc 6-25.
cc 37-47	Y2 expected current expense revenues from the State source identified in cc 6-25.
cc 48-58	Y3 expected current expense revenues from the State source identified in cc 6-25.
cc 59-69	Y4 expected current expense revenues from the State source identified in cc 6-25.
cc 70-80	Y5 expected current expense revenues from the State source identified in cc 6-25.

END Card (for STATE CURRENT EXPENSE REVENUE ITEMS) - Purpose

The END card is used to identify the end of the data input deck consisting of estimates of revenue items from State current expense funding sources.

The END card following the State current expense revenue items data deck is mandatory, if the aforementioned deck is present, or follows CARD TYPE 29, if not present.

CARD TYPE 30A - END CARD (FOR STATE CURRENT EXPENSE REVENUE ITEMS DATA DECK) - FORMAT 4x,A1


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 75 80
3 0 A B

cc 1-4	CARD TYPE 30A.
cc 5	Enter B (remainder of the card is blank). This card is placed after the last input card in the deck of cards comprising current revenue items from state sources. This card signals the end of the data input card deck of state current expense revenue items.

Card Type 30A is mandatory.

STATE CATEGORICAL SOURCES REVENUE ITEM Card - Purpose

The STATE CATEGORICAL SOURCES REVENUE ITEM card is used to input the title of and the estimated Y1-Y5 revenues from State categorical sources.

The estimated Y1-Y5 total revenues from State categorical sources are used to determine revenue feasibility of non-current expense (categorical) costs.

A set of STATE CATEGORICAL REVENUE ITEM cards is optional relative to the running of the REVSIM computer program.

CARD TYPE 31 - Y1-Y5 REVENUE ITEMS FROM STATE CATEGORICAL SOURCES - FORMAT - 4x,A1,5A4,5F11.0

```
1 2   4   6   8   10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46  48  50   78  80
|3|1|0|0|C|M|O|D|E|L| |C|I|T|I|E|S| |P|R|0|J|E|C|T|S| | | | |1|5|0|0|0|.| | | | | |1|5|0|0|0|.| | | | | | |0|.|
```

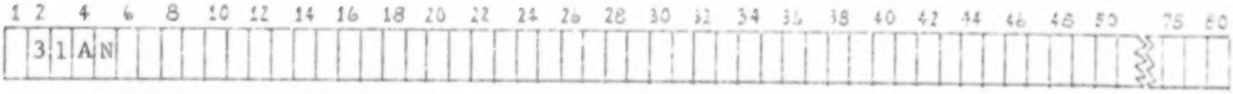
CC 1-2	CARD TYPE 31.
CC 3-4	Base case is 00 or the alternative case number. Enter C to identify the data card as a categorical expense revenue item.
CC 5	Enter C to identify the data card as a categorical expense revenue item.
CC 6-25	Name identifier of the revenue item from a State categorical source.
CC 26-36	Y1 expected categorical revenues from the State source identified in CC 6-25.
CC 37-47	Y2 expected categorical revenues from the State source identified in CC 6-25.
CC 48-58	Y3 expected categorical revenues from the State source identified in CC 6-25.
CC 59-69	Y4 expected categorical revenues from the State source identified in CC 6-25.
CC 70-80	Y5 expected categorical revenues from the State source identified in CC 6-25.

END Card (for STATE CATEGORICAL EXPENSE ITEMS) - Purpose

The END card is used to identify the end of the data input deck consisting of estimates of revenue items from State categorical funding sources.

The END card following the State categorical expense revenue items data deck is mandatory.

CARD TYPE 31A - END CARD (FOR STATE CATEGORICAL EXPENSE REVENUE ITEMS DATA DECK) - FORMAT 4x,A1


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 75 80
3 1 A N

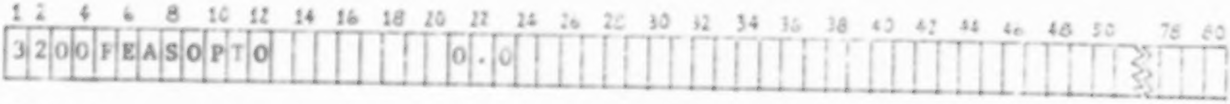
cc 1-4	CARD TYPE 31A.
cc 5	Enter N (remainder of the card is blank). This card is placed after last state categorical revenue item input card. This card signals both the end of categorical revenue items from State sources, and revenue items from all State sources.

REVENUE FEASIBILITY OPTION Card - Purpose

The REVENUE FEASIBILITY OPTION Card is used to input to the system the revenue feasibility version to be calculated by REVSIM, and to input the actual current year surplus.

The REVENUE FEASIBILITY OPTION Card is optional, the default option being Option 1 (only CY Surplus (actual) carried forward to Y1, and the real estate tax rate is permitted to fluctuate).

CARD TYPE 32 - REVENUE FEASIBILITY OPTION CARD - FORMAT 11x,I1,F12.2


1 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 78 80
3 2 0 0 F E A S O P T 0
0 . 0

cc 1-2	CARD TYPE 32.
cc 3-4	Enter 00 for base case, or the alternative case number.
cc 5-11	Enter card identifier FEASØPT as an English language card name, denoting the Revenue Feasibility Option Type Input card, for easu user identification.
cc 12	Enter appropriate revenue feasibility option number 0, 1, or 2.
cc 13-24	Actual CY surplus to be carried forward to Y1.

COMPUTER PROGRAM DOCUMENTATION

INTRODUCTION

Documentation for each program consists of a computer program flowchart, a listing of the computer program, a variable dictionary of the computer program, sample output reports with commentary, and the overall order of the input deck for each program.

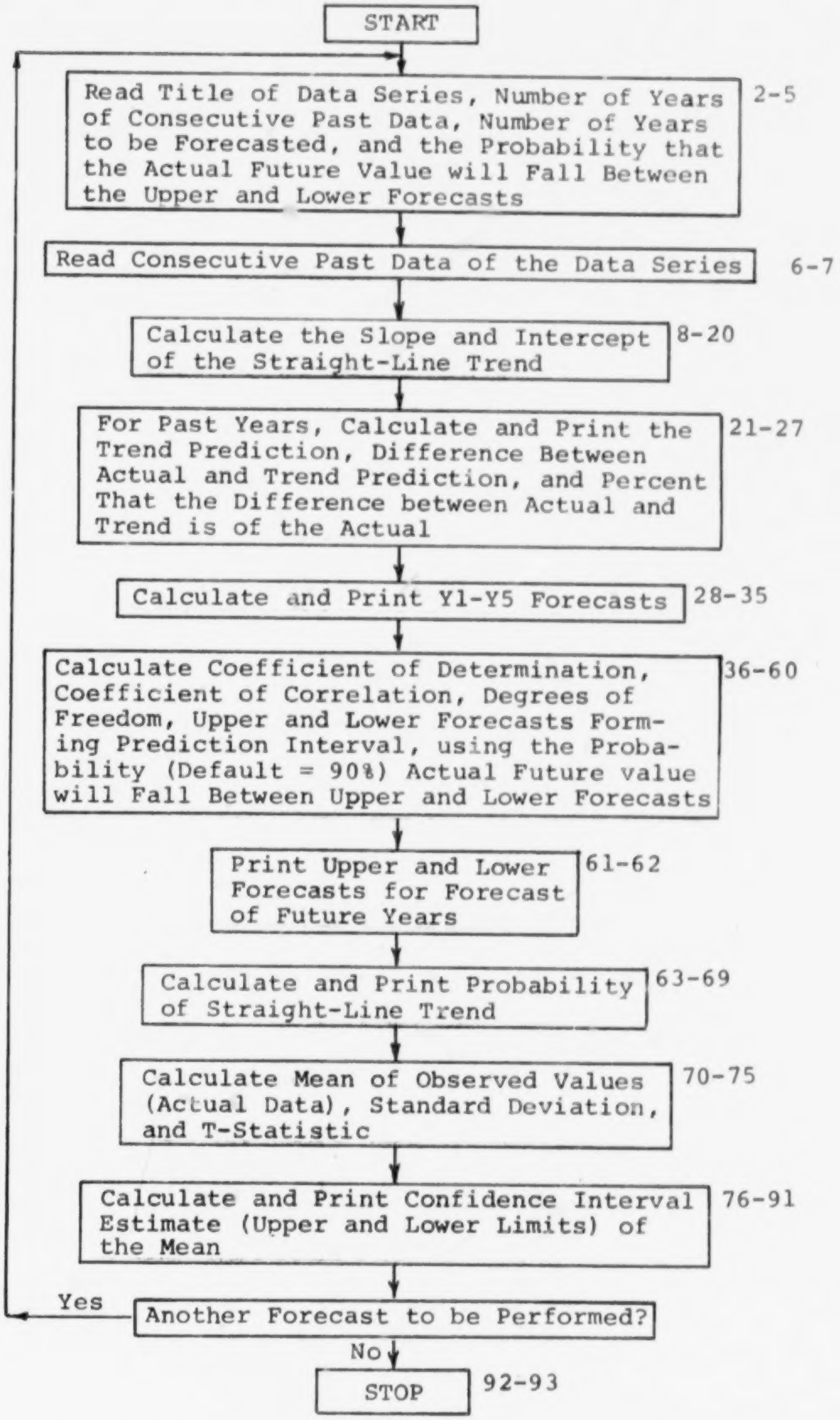
Documentation for the Trend Analysis Program is presented first, followed by the Revenue Simulation Program description.

DOCUMENTATION OF THE TREND ANALYSIS PROGRAM

Chart III.4-5 is a flowchart of the Trend Analysis Computer Program. The numbers to the right of each box of the chart refer to the FORTRAN internal statement numbers on the left margin of the TAPS computer program listing following this flowchart.

Chart III.4-5

FLOWCHART OF TREND ANALYSIS
COMPUTER PROGRAM


START
Read Title of Data Series, Number of Years of Consecutive Past Data, Number of Years to be Forecasted, and the Probability that the Actual Future Value will Fall Between the Upper and Lower Forecasts
2-5
Read Consecutive Past Data of the Data Series
6-7
Calculate the Slope and Intercept of the Straight-Line Trend
8-20
For Past Years, Calculate and Print the Trend Prediction, Difference Between Actual and Trend Prediction, and Percent That the Difference between Actual and Trend is of the Actual
21-27
Calculate and Print Y1-Y5 Forecasts
28-35
Calculate Coefficient of Determination, Coefficient of Correlation, Degrees of Freedom, Upper and Lower Forecasts Forming Prediction Interval, using the Probability (Default = 90%) Actual Future value will Fall Between Upper and Lower Forecasts
36-60
Print Upper and Lower Forecasts for Forecast of Future Years
61-62
Calculate and Print Probability of Straight-Line Trend
63-69
Calculate Mean of Observed Values (Actual Data), Standard Deviation, and T-Statistic
70-75
Calculate and Print Confidence Interval Estimate (Upper and Lower Limits) of the Mean
76-91
Yes
Another Forecast to be Performed?
No
STOP
92-93

Listing of the Trend Analysis Computer Program

The TAPS computer program listing written in the FORTRAN IV programming language, is provided below. A variable dictionary follows the listing.

```
                C
                C     TREND ANALYSIS AND FORECASTING SYSTEM
                C
  0001                DIMENSION TITLE(10),Y(50),X(3)
                C     READ TITLE OF DATA SERIES, NUMBER OF YEARS OF CONSECUTIVE PAST
                C           DATA, NUMBER OF YEARS TO BE FORECASTED, AND THE PROBABILITY
                C           USED TO CALCULATE THE LOWER AND UPPER FORECASTS. PBETWN IS
                C           THE PROBABILITY THAT THE ACTUAL FUTURE VALUE WILL FALL
                C           BETWEEN THE LOWER AND UPPER FORECASTS. IF A PROBABILITY IS
                C           NOT INPUTED, A 90 PERCENT PROBABILITY IS ASSUMED.
  0002          1     READ(5,2,END=100)(TITLE(I),I=1,10),NC,NF,PBETWN
  0003              2 FORMAT(10A4,2I2,F4.0)
                C     IF THE NUMBER OF YEARS OF PAST DATA IS ZERO, STOP. TO STOP THE
                C           PROGRAM, MAKE THE LAST CARD IN THE INPUT DATA DECK A BLANK
                C           CARD.
  0004                WRITE(6,3)(TITLE(I),I=1,10)
  0005              3 FORMAT(1H1,25X,37HTREND ANALYSIS AND FORECASTING SYSTEM/1H0,19X,
                     115HDATA SERIES IS ,10A4/1H0,131(1H-)/1H0,24X,38HCORRESPONDENCE BET
                     2WEEN THE ACTUAL DATA/1H ,8X,70HAND WHAT A STRAIGHT-LINE TREND WOUL
                     3D HAVE PREDICTED AS THE ACTUAL DATA/1H0,70X,22HPERCENT ACTUAL - TR
                     4END/1H ,5X,4HYEAR,5X,11HACTUAL DATA,5X,16HTREND PREDICTION,5X,14HA
                     5CTUAL - TREND,10X,12HIS OF ACTUAL)
                C     READ THE CONSECUTIVE PAST DATA.
  0006                READ(5,4)(Y(I),I=1,NC)
  0007              4 FORMAT(10F8.0)
                C     CALCULATE THE SLOPE AND THE INTERCEPT OF THE STRAIGHT-LINE TREND.
                C           THE FIRST ITEM IN THE PAST DATA CORRESPONDS TO YEAR 1, THE
                C           SECOND ITEM TO YEAR 2, ETC.
  0008                SY=0.0
  0009                SY2=0.0
  0010                SIY=0.0
  0011                DO 5 I=1,NC
  0012                SY=SY+Y(I)
  0013                SY2=SY2+Y(I)**2
  0014                RI=I
  0015              5 SIY=SIY+RI*Y(I)
  0016                RNC=NC
  0017                SI=(RNC*(RNC+1.))/2.
  0018                SI2=(SI*(2.*RNC+1.))/3.
                C     FOR THE FORMULAS, SEE PAGE 192 OF EDWIN L. CROW, FRANCES A. DAVIS,
                C           AND MARGARET W. MAXFIELD, STATISTICS MANUAL.
  0019                B=(RNC*SIY-SI*SY)/(RNC*SI2-(SI**2))
  0020                A=(SY-B*SI)/RNC
                C     FOR THE PAST YEARS, CALCULATE THE TREND PREDICTION, ACTUAL - TREND
                C           PREDICTION, AND PERCENT ACTUAL - TREND PREDICTION IS OF
                C           ACTUAL AND PRINT.
  0021                DO 6 I=1,NC
  0022                RI=I
  0023                X(1)=A+B*RI
  0024                X(2)=Y(I)-X(1)
  0025                X(3)=(X(2)/Y(I))*100.
  0026              6 WRITE(6,7)I,Y(I),(X(J),J=1,3)
  0027              7 FORMAT(1H ,7X,I2,4X,F12.2,9X,F12.2,7X,F12.2,7X,F12.2)
  0028                WRITE(6,8)
  0029              8 FORMAT(1H0,131(1H-)/1H0,5X,4HYEAR,5X,24HFORECAST OF FUTURE YEARS)
                C     CALCULATE AND PRINT FORECASTS.
  0030                DO 9 I=1,NF
```

```
0031                J=NC+I
0032                RI=J
0033                X(1)=A+B*RI
0034              9 WRITE(6,10)J,X(1)
0035             10 FORMAT(1H0,7X,I2,17X,F12.2)
           C        CALCULATE COEFICIENT OF DETERMINATION (COEFICIENT OF CORRELATION
           C              SQUARED) USING FORMULAS ON PAGES 13 AND 158 OF STATISTICS
           C              MANUAL.
0036                VI=(RNC*SI2-(SI**2))/(RNC*(RNC-1.))
0037                VY=(RNC*SY2-(SY**2))/(RNC*(RNC-1.))
0038                R2=((B**2)*VI)/VY
           C        CALCULATE NUMBER OF DEGREES OF FREEDOM.
0039                NDF=NC-2
           C        IF NO PROBABILITY WAS SPECIFIED, USE 90 PERCENT AS THE PROBABILITY
           C              ACTUAL FUTURE VALUE WILL FALL BETWEEN LOWER AND UPPER
           C              FORECASTS.
0040                IF(PBETWN.EQ.0.0)PBETWN=90.0
           C        CALCULATE THE PROBABILITY IN THE TAILS.
0041                PTAILS=1.-(PBETWN/100.)
           C        FIND THE T VALUE CORRESPONDING TO THE PROBABILITY IN THE TAILS
           C              AND THE DEGREES OF FREEDOM.
0042                CALL TDIST(1,NDF,T,PTAILS,KER)
           C        IF KER IS 1, THERE WAS TROUBLE IN FINDING THE T VALUE.
0043                IF(KER.EQ.1)GO TO 11
0044                WRITE(6,12)
0045             12 FORMAT(1H0,5X,39HTROUBLE IN FINDING T-DISTRIBUTION VALUE/1H0,5X,
                   165HSKIPPING COMPUTATION OF LOWER AND UPPER FORECASTS OF FUTURE YEA
                   2RS)
0046                GO TO 16
           C        PRINT THE PROBABILITY.
0047             11 WRITE(6,13)PBETWN
0048             13 FORMAT(1H0,131(1H-)/1H0,12X,55HRANGE OF PROBABLE VARIATION IN FORE
                   1CAST OF FUTURE YEARS/1H0, 6X,10HTHERE IS A,F5.1,   49H PERCENT CHA
                   2NCE THE ACTUAL FUTURE VALUE WILL FALL/1H ,15X,49HBETWEEN THE LOWER
                   3 AND UPPER FORECASTS SHOWN BELOW/1H0,5X,4HYEAR,5X,14HLOWER FORECAS
                   4T,5X,8HFORECAST,5X,14HUPPER FORECAST,5X,13HUPPER - LOWER)
           C        CALCULATE AND PRINT THE LOWER AND UPPER FORECASTS FORMING THE SO
           C              CALLED PREDICTION INTERVAL FOR AN INDIVIDUAL VALUE OF Y. SEE
           C              THE FORMULAS ON PAGES 156 AND 163 OF THE STATISTICS MANUAL.
0049                VYGI=((RNC-1.)*VY*(1.-R2))/(RNC-2.)
0050                TMP1=T*SQRT(VYGI)
0051                AI=(RNC+1.)/2.
0052                DO 14 I=1,NF
0053                J=NC+I
0054                RI=J
0055                X(2)=A+B*RI
0056                TMP2=1.+(1./RNC)+((RI-AI)**2)/((RNC-1.)*VI)
0057                TMP2=TMP1*SQRT(TMP2)
0058                X(1)=X(2)-TMP2
0059                X(3)=X(2)+TMP2
0060                TMP2=2.*TMP2
0061             14 WRITE(6,15)J,(X(K),K=1,3),TMP2
0062             15 FORMAT(1H0,7X,I2,7X,F12.2,1X,F12.2,7X,F12.2,6X,F12.2)
           C        TEST THE STATISTICAL SIGNIFICANCE OF THE COEFICIENT OF
           C              DETERMINATION (OR COEFICIENT OF CORRELATION). SEE PAGE 33 OF
           C              J. JOHNSTON, ECONOMETRIC METHODS, FOR THE STATISTICAL TEST
           C              AND FORMULAS.
```

```
FORTRAN IV G LEVEL  19                MAIN                DATE = 72067          06/53/17                PAGE 0003
 0063                  16 R=SQRT(R2)
                C         CALCULATE THE VALUE OF T.
 0064                     T=(R*SQRT(RNC-2.))/SQRT(1.-R2)
                C         CALCULATE THE PROBABILITY OF BEING IN THE TAILS, I.E., THE
                C               PROBABILITY OF NO SIGNIFICANT STRAIGHT-LINE TREND.
 0065                     CALL TDIST(0,NDF,T,PTAILS,KER)
 0066                     PTAILS=PTAILS*100.
 0067                     PCUT=20.0

                C         PRINT THE PROBABILITY OF NO SIGNIFICANT STRAIGHT-LINE TREND AND
                C               THE WARNING PROBABILITY.
 0068                     WRITE(6,17)PTAILS,PCUT
 0069                  17 FORMAT(1H0,131(1H-)/1H0, 5X,10HTHERE IS A,F5.1,      74H PERCENT CH
                        1ANCE THE ACTUAL DATA HAVE NO SIGNIFICANT (STRAIGHT-LINE) TREND./
                        21H ,5X,104HIT IS CONSIDERED HAZARDOUS TO PROJECT USING THE TREND W
                        3HEN THE PERCENT CHANCE OF NO SIGNIFICANT TREND EXCEEDS,F4.0)
                C
                C COMPUTE CONFIDENCE INTERVAL ESTIMATE OF MEAN T-DISTRIBUTION
                C
 0070                     YBAR=SY/RNC
                C
                C CALCULATE STANDARD DEVIATION
                C
 0071                     SDY=SQRT(VY)
                C
                C CALCULATE T-STATISTIC
                C
 0072                     NDF=NC-1
 0073                     PTAILS=1.-(PBETWN/100.)
 0074                     CALL TDIST(1,NDF,T,PTAILS,KER)
 0075                     TSAVE=T
                C
                C CALCULATE LOWER AND UPPER LIMITS
                C
 0076                     FL=YBAR-TSAVE*SDY
 0077                     FU=YBAR+TSAVE*SDY
                C
                C PRINT CONFIDENCE INTERVAL LIMITS
                C
 0078                     WRITE(6,260)
 0079                 260 FORMAT('1','CONFIDENCE INTERVAL ESTIMATE OF MEAN')
 0080                     WRITE(6,205) PBETWN
 0081                 205 FORMAT('0',F4.0,'% CONFIDENCE INTERVAL')
 0082                     WRITE(6,210)
 0083                 210 FORMAT('0')
 0084                     WRITE(6,215)
 0085                 215 FORMAT('0',11X,'LOWER LIMIT',13X,'MEAN',5X,'UPPER LIMIT')
 0086                     WRITE(6,220) FL,YBAR,FU
 0087                 220 FORMAT('0',10X,F12.2,2(5X,F12.2))
 0088                     WRITE(6,210)
 0089                     WRITE(6,225) NDF,SDY,TSAVE
 0090                 225 FORMAT('0','  DEGREES OF FREEDOM:',I4,2X,'EST. STD ERROR OF MEAN:
                        1 ',F12.2,4X,'T-STATISTIC:',F7.4)
                C         GO TO THE NEXT DATA SERIES.
 0091                     GO TO 1
 0092           100       STOP
 0093                     END
```

```
FORTRAN IV G LEVEL  19                 TDIST              DATE = 72067          08/53/17                 PAGE 0001

 0001                  SUBROUTINE TDIST(KEY,NX,TX,PX,KONV)
                 C     THIS SUBROUTINE PERFORMS THE FOLLOWING TWO FUNCTIONS. ASSUMING T
                 C     IS DISTRIBUTED AS STUDENTS T,
                 C          (1) FIND THE PROBABILITY THAT THE ABSOLUTE VALUE OF T IS
                 C          GREATER THAN THE ABSOLUTE VALUE OF TX.
                 C          (2) FIND THE VALUE OF TX WHEN THE PROBABILITY THAT THE
                 C          ABSOLUTE VALUE OF T IS GREATER THAN THE ABSOLUTE VALUE OF TX
                 C               IS GIVEN.
                 C     KEY = 0 FIND PX GIVEN N AND TX
                 C     KEY = 1 FIND TX GIVEN N AND PX
                 C     N = THE NUMBER OF DEGRESS OF FREEDOM
                 C     TX = THE INDEPENDENT VARIABLE
                 C     PX = THE PROBABILITY THAT THE ABSOLUTE VALUE OF T IS GREATER THAN
                 C          THE ABSOLUTE VALUE OF TX
                 C     KONV = 1 NO ERROR IN COMPUTATION
                 C     KONV = 2 N IS LESS THAN 1
                 C     KONV = 3 PX IS LESS THAN .00001 WHEN KEY = 1
                 C     KONV = 4 PX IS GREATER THAN 1 WHEN KEY = 1
                 C     KONV = 5 NO CONVERGENCE OF NEWTONS METHOD AFTER 100 ITERATIONS
                 C               WHEN KEY = 1
 0002                  N=NX
 0003                  IF(N-1)31,32,32
 0004               31 KONV=2
 0005                  GO TO 26
 0006               32 M=N/2
 0007                  K=N-2*M
 0008                  V=FLOAT(N)
 0009                  SV=SQRT(V)
 0010                  KONV=1
 0011                  IF(KEY)2,1,2
 0012                1 T=ABS(TX)
 0013               23 IF(K)4,3,4
 0014                3 FNO=-1.
 0015                  GO TO 5
 0016                4 FNO=0.
 0017                5 FN=FNO
 0018                  F=1.
 0019                  TS=T**2
 0020                  XC=V/(TS+V)
 0021                  X=1.
 0022                  S=0.
 0023                  IF(M)11,11,29
 0024               29 DO 6 I=1,M
 0025                  S=S+F*X
 0026                  FN=FN+2.
 0027                  F=(F/(FN+1.))*FN
 0028                6 X=X*XC
 0029                  IF(K)11,10,11
 0030               10 P=-SQRT(TS/(TS+V))*S+1.
 0031               14 IF(KEY)22,30,22
 0032               30 PX=P
```

```
FORTRAN IV G LEVEL  19                    TOIST               DATE = 72067          08/53/17              PAGE 0002
   0033                 26 RETURN
   0034                 11 TR=T/SV
   0035                    P=-.63661977*(ATAN(TR)+TR*XO*S)+1.
   0036                    GO TO 14
   0037                  2 T=0.
   0038                    IF(PX-.00001)33,35,35
   0039                 35 IF(PX-1.)34,34,36
   0040                 36 KONV=4
   0041                    GO TO 26
   0042                 33 KONV=3

   0043                    GO TO 26
   0044                 34 KOUNT=0
   0045                    SLF=1.2533*(1.+.5/V)
   0046                    GO TO 23
   0047                 22 TN=AMAX1(0.,T+(P-PX)*SLF/(X*SQRT(XO)**(K+1)))
   0048                    IF(ABS(P-PX)-2.E-6)24,24,25
   0049                 25 KOUNT=KOUNT+1
   0050                    IF(KOUNT-100)28,28,27
   0051                 27 KONV=5
   0052                 24 TX=TN
   0053                    GO TO 26
   0054                 28 T=TN
   0055                    GO TO 5
   0056                    END
```

VARIABLE DICTIONARY FOR TREND ANALYSIS COMPUTER PROGRAM

Variable	Definition
A	Intercept on the Y axis of the line.
AI	Temporary variable used in calculating prediction interval for individual values of Y.
B	Slope of the line.
FL	Lower limit of confidence interval of the Mean.
FU	Upper limit of a confidence interval of the Mean.
I	Temporary index.
J	Temporary index used to calculate forecast year.
K	Temporary index.
NC	Number of years of consecutive past data
NDF	Number of degrees of freedom.
NF	Number of years to be forecasted.
PBETWN	Probability actual future value will fall between the lower and upper forecasts.

Variable	Definition
PCUT	Probability selected as cutoff in determining applicability of straight-line trend to data series.
PTAILS	Probability of being in the tail of a T-distribution.
SDY	Standard deviation of data series of a particular number of observations.
SI	Sum of the years.
SIY	Sum of the product of dependent variable times years.
SI2	Sum of the years squared.
SY	Sum of the dependent variable.
SY2	Sum of the dependent variable squared.
R	Coefficient of correlation.
R2	Coefficient of determination.
T	T-value corresponding to the probability of being in the tails of the distribution and the number of degrees of freedom.
TITLE(I)	Title of data series being entered into TAPS for trend analysis. Subscript I ranges over the storage locations necessary to store the characters in the name.

Variable	Definition
TMP1	Temporary variable needed in the calculation of the prediction interval (lower and upper range) for individual values of Y (dependent variable).
TMP2	Temporary variable required to perform various calculations as follows: (1) Computes data needed in the calculation of the prediction interval for individual values of Y; (2) and the actual prediction interval increment.
TSAVE	Temporary variable used to store T value.
VI	Variance in the independent variable.
VY	Variance in the dependent variable.
VYGI	Variation about the dependent variable given the independent variable.
X(1)	Temporary variable used to make the following calculations (1) Future year forecast (2) Lower limit of a prediction interval for forecasted value of Y.
X(2)	Temporary variable used to perform various calculations such as: (1) Difference between actual data and forecast. (2) Future year forecast.

Variable	Definition
X(3)	Temporary variable used to make the following calculations: (1) Percent that the actual-trend prediction is of the actual data value. (2) Upper limit of a prediction interval for forecasted value of Y.
YBAR	Mean value of data series.
Y(I)	Data series being analyzed. Subscript I ranges over number of years of past data.

TREND ANALYSIS COMPUTER PROGRAM SAMPLE OUTPUT REPORT

The sample output report shown and discussed in this chapter is based upon actual data for the City of Trenton and is intended for illustrative purposes.

TREND ANALYSIS DATA SERIES FORECAST REPORT

The title of the data series, the number of years of past data to be input, and the number of years to be forecasted are input. The data series title is used as a header line of the output report.

Historical data by year for the number of years of past data input is printed. The trend prediction for the past years, the difference between the actual data and the trend prediction, and the percent the difference is to the actual data are calculated and printed.

The data series forecast by year for the number of years to be forecasted is computed and printed.

The range of probable variation in the upper and lower limits are calculated. The statistical significance of the straight line trend for the data series is calculated.

The mean and the confidence interval of the mean are calculated.

```
                     TREND ANALYSIS AND FORECASTING SYSTEM

              DATA SERIES IS MKT VALUE CLASS II RR PROPERTY 1967-71
------------------------------------------------------------------------------------------

                     CORRESPONDENCE BETWEEN THE ACTUAL DATA
          AND WHAT A STRAIGHT-LINE TREND WOULD HAVE PREDICTED AS THE ACTUAL DATA

    YEAR     ACTUAL DATA      TREND PREDICTION      ACTUAL - TREND     PERCENT ACTUAL - TREND
                                                                           IS OF ACTUAL
      1      3196073.00            3201603.00            -5530.00              -0.17
      2      3196095.00            3183143.00            12952.00               0.41
      3      3162143.00            3164682.00            -2539.00              -0.08
      4      3134551.00            3146222.00           -11671.00              -0.37
      5      3134551.00            3127761.00             6790.00               0.22
------------------------------------------------------------------------------------------
    YEAR     FORECAST OF FUTURE YEARS
      6                  3109301.00
      7                  3090840.00
      8                  3072380.00
      9                  3053919.00
     10                  3035459.00
------------------------------------------------------------------------------------------

           RANGE OF PROBABLE VARIATION IN FORECAST OF FUTURE YEARS

    THERE IS A 95.0 PERCENT CHANCE THE ACTUAL FUTURE VALUE WILL FALL
              BETWEEN THE LOWER AND UPPER FORECASTS SHOWN BELOW

    YEAR     LOWER FORECAST      FORECAST        UPPER FORECAST     UPPER - LOWER
      6          3058060.00     3109301.00          3160541.00        102480.69
      7          3031672.00     3090840.00          3150007.00        118334.50
      8          3004365.00     3072380.00          3140394.00        136029.50
      9          2976450.00     3053919.00          3131387.00        154936.25
     10          2948128.00     3035459.00          3122789.00        174661.50
------------------------------------------------------------------------------------------
    THERE IS A  1.3 PERCENT CHANCE THE ACTUAL DATA HAVE NO SIGNIFICANT (STRAIGHT-LINE) TREND.
    IT IS CONSIDERED HAZARDOUS TO PROJECT USING THE TREND WHEN THE PERCENT CHANCE OF NO SIGNIFICANT TREND EXCEEDS 20.
```

```
CONFIDENCE INTERVAL ESTIMATE OF MEAN

 95.% CONFIDENCE INTERVAL

          LOWER LIMIT            MEAN      UPPER LIMIT

           3C79351.00      3164682.CC       3250012.0C

  DEGREES CF FREEDOM:   4   EST. STD ERROR OF MEAN:      30733.65    T-STATISTIC: 2.7764
```

Overall Order of Card Deck For TAPS

Exhibit III.4-vi

```
********************************************************************************
        OVERALL ORDER OF TAPS CARD DECK
********************************************************************************

********************************************************************************
                      JOB CONTROL LANGUAGE(JCL)
********************************************************************************
 // JOB etc.
 // EXEC PORTGOG
 //GO.SOURCE DD *

                      INSERT TAPS PROGRAM DECK
/*
//GO.SYSIN DD *
********************************************************************************
                      SET OF DATA INPUT CARDS FOR EACH DATA SERIES
                           CARD TYPE 01 FOLLOWED BY CARD TYPE 02
********************************************************************************

NET VALUE OF LAND(IN THOUSANDS) 1965-71  7 5 65.

  71422.  67663.  71535.  72295.  76370.  75221.  71563.

NET VALUE-IMPROVEMENTS(THOUSANDS) 65-71  7 5

 278119.  266781.  252625.  256315.  262023.  267564.  257110.

NET VALUE PERSONALTY(THOUSANDS) 1968-71  4 5

  16914.  15023.  16821.  20573.

TOTAL NET VALUE-LAND,IMPROV,PERS,1968-71 4 5 35.

 343436.  352222.  362009.  369260.

NET VALUE CLASS II RR PROPERTY 1967-71   5 5 65.

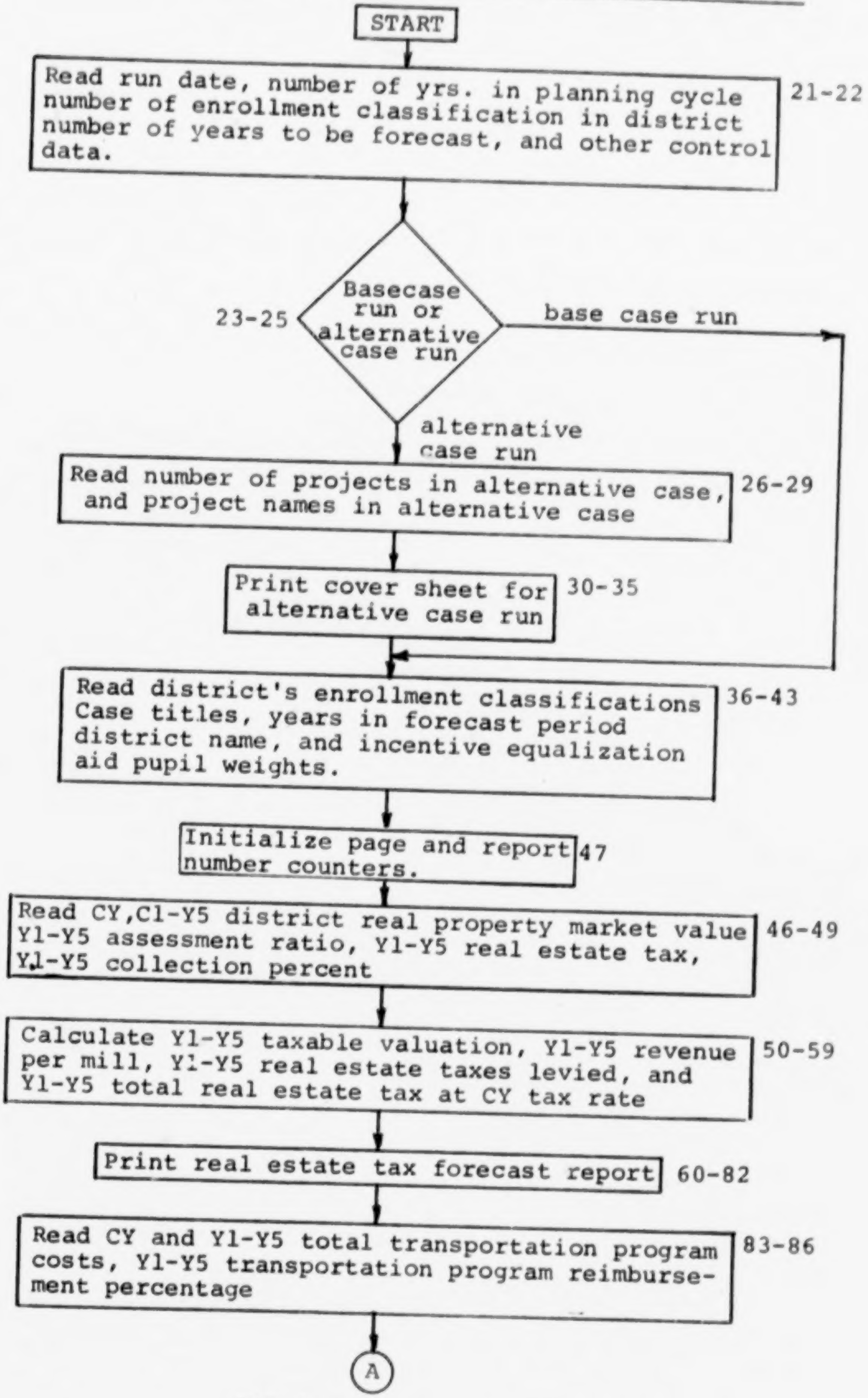
3106023.3106095.3162143.3134551.3134551.
/*
//
```

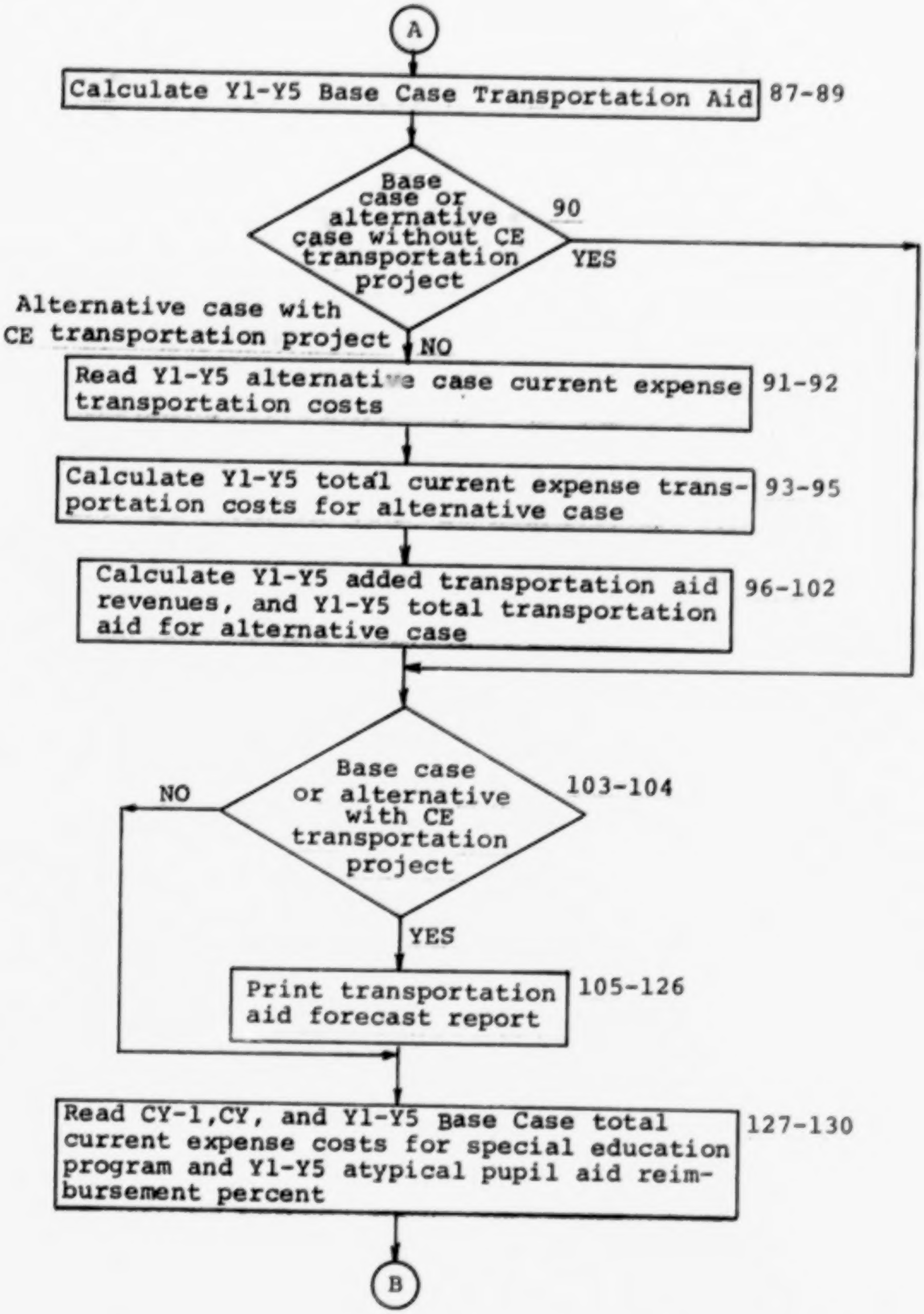
Documentation of the Revenue Simulator Computer Program

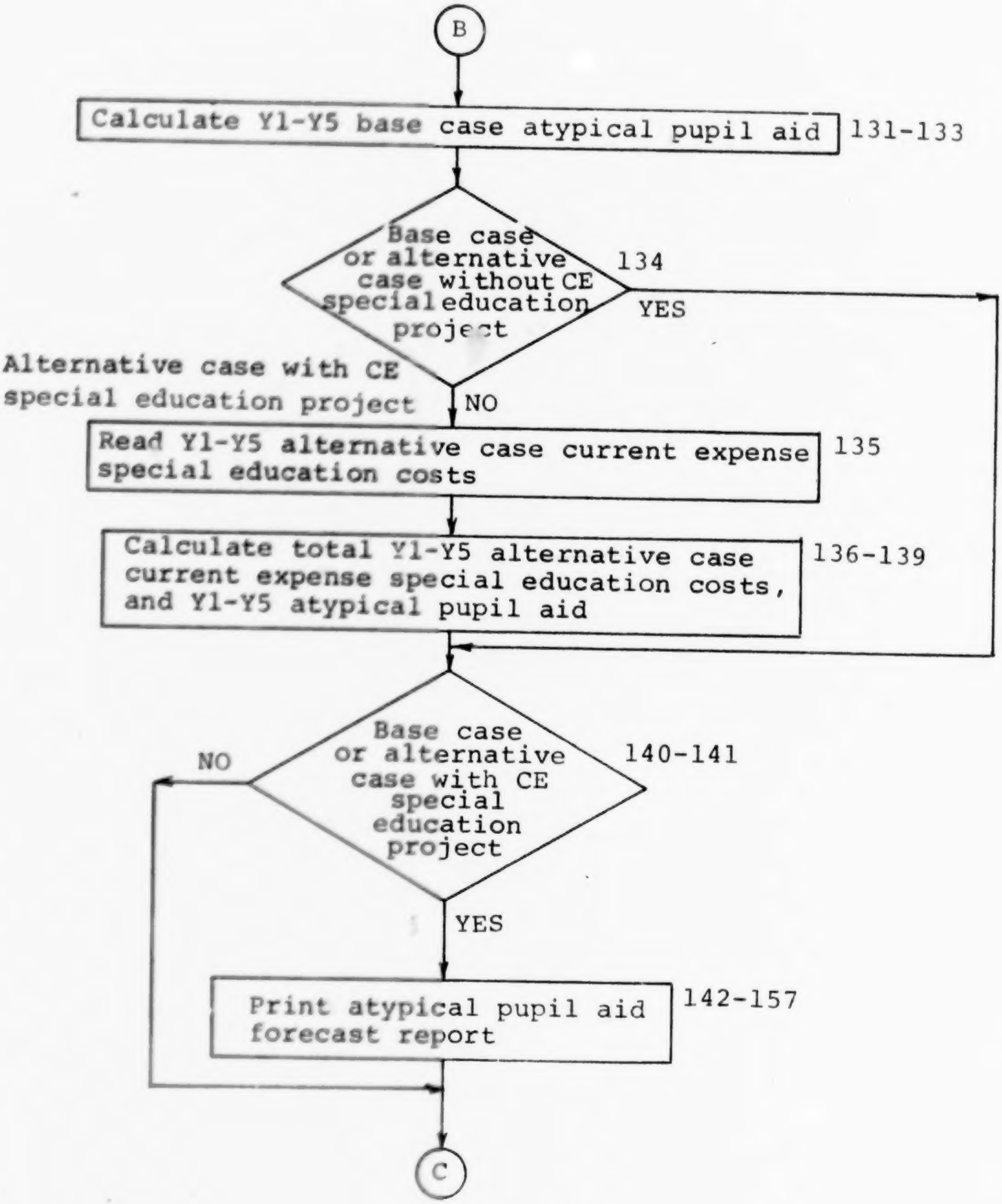
Chart III.4-6 is a flowchart of the Revenue Simulator Computer Program. The numbers to the right of each box of the chart refers to the statement numbers on the left margin of the REVSIM computer program listing following this flowchart.

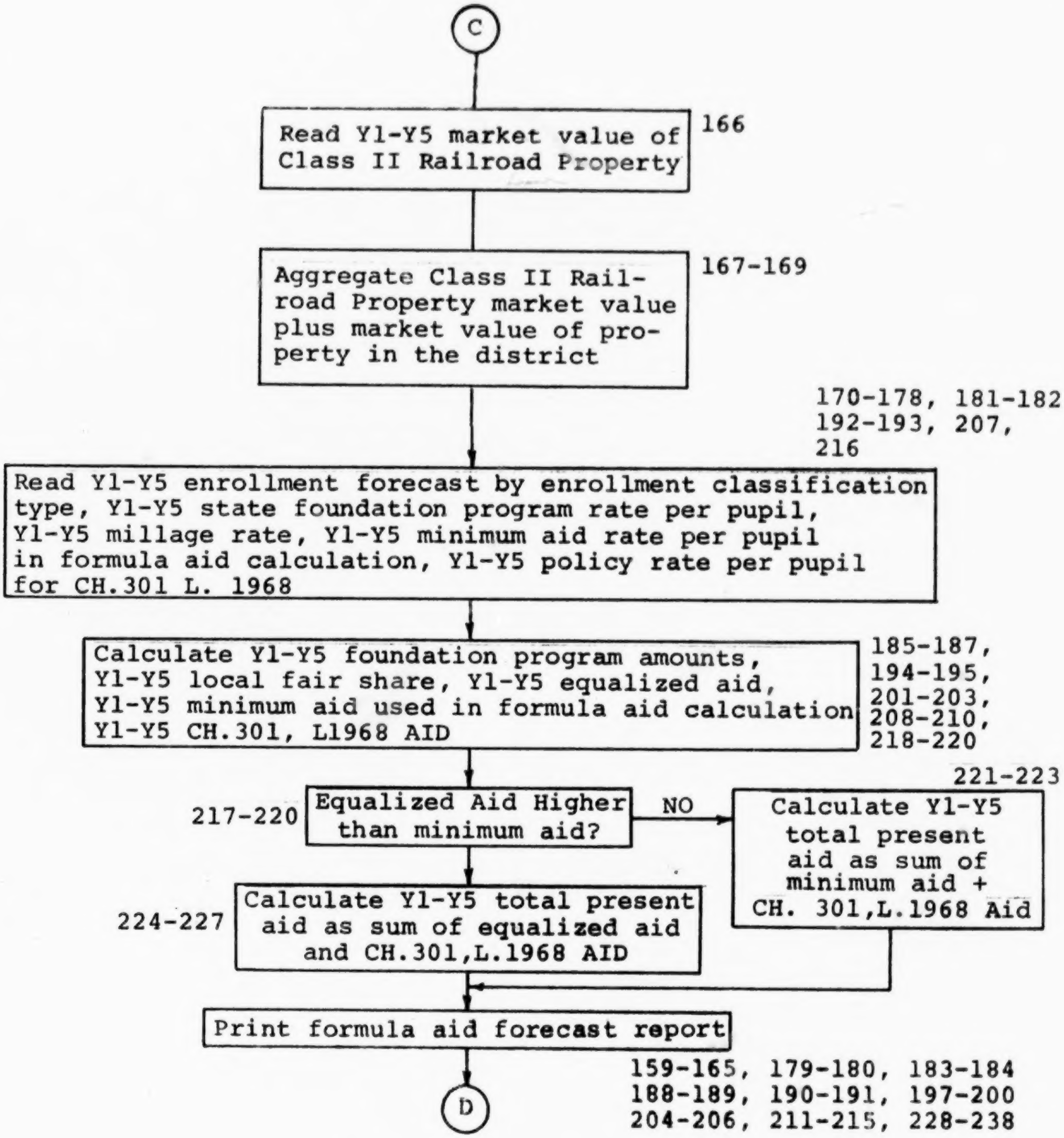
Chart III.4-6

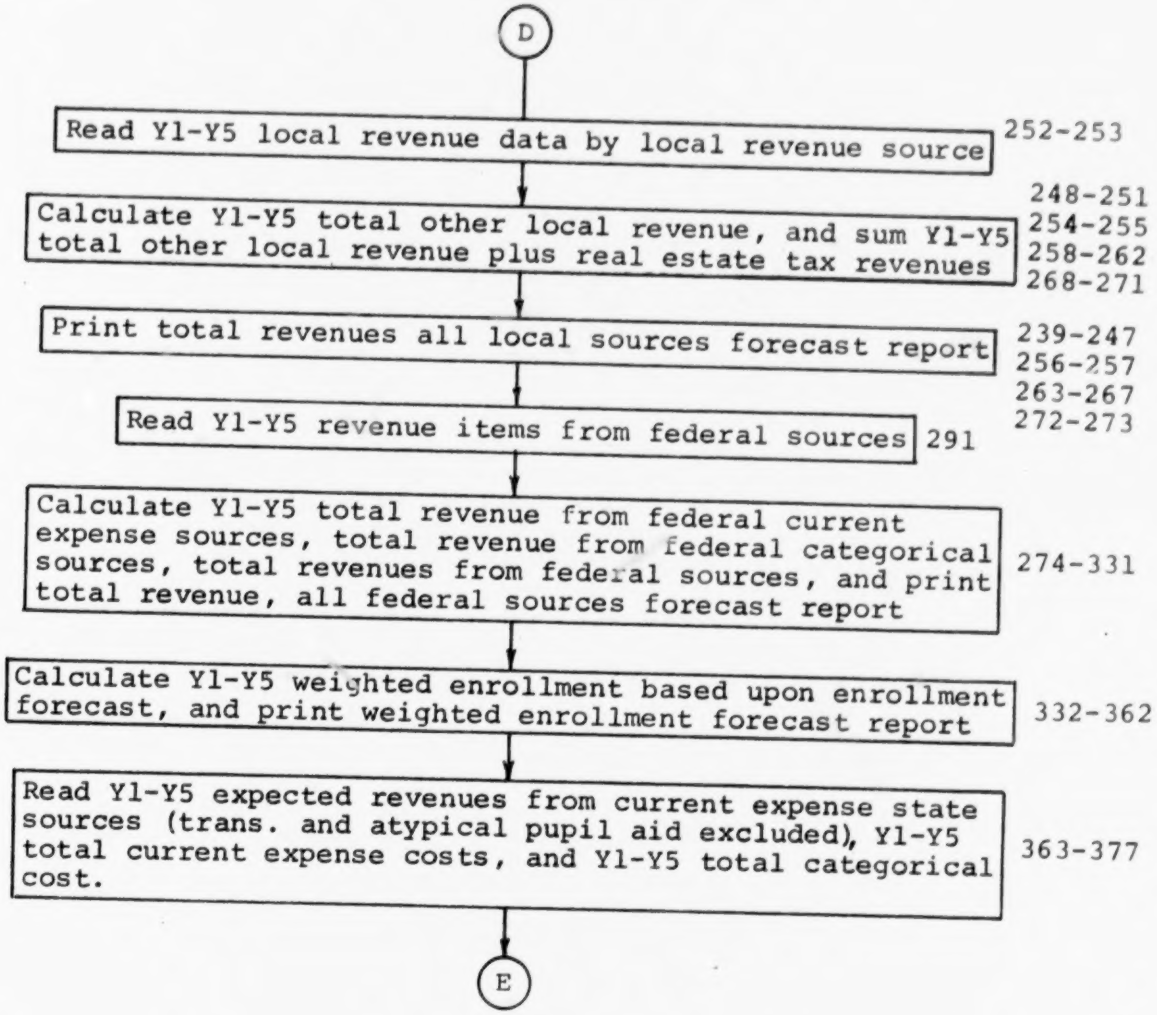
FLOWCHART OF THE REVENUE FORECASTER COMPUTER PROGRAM

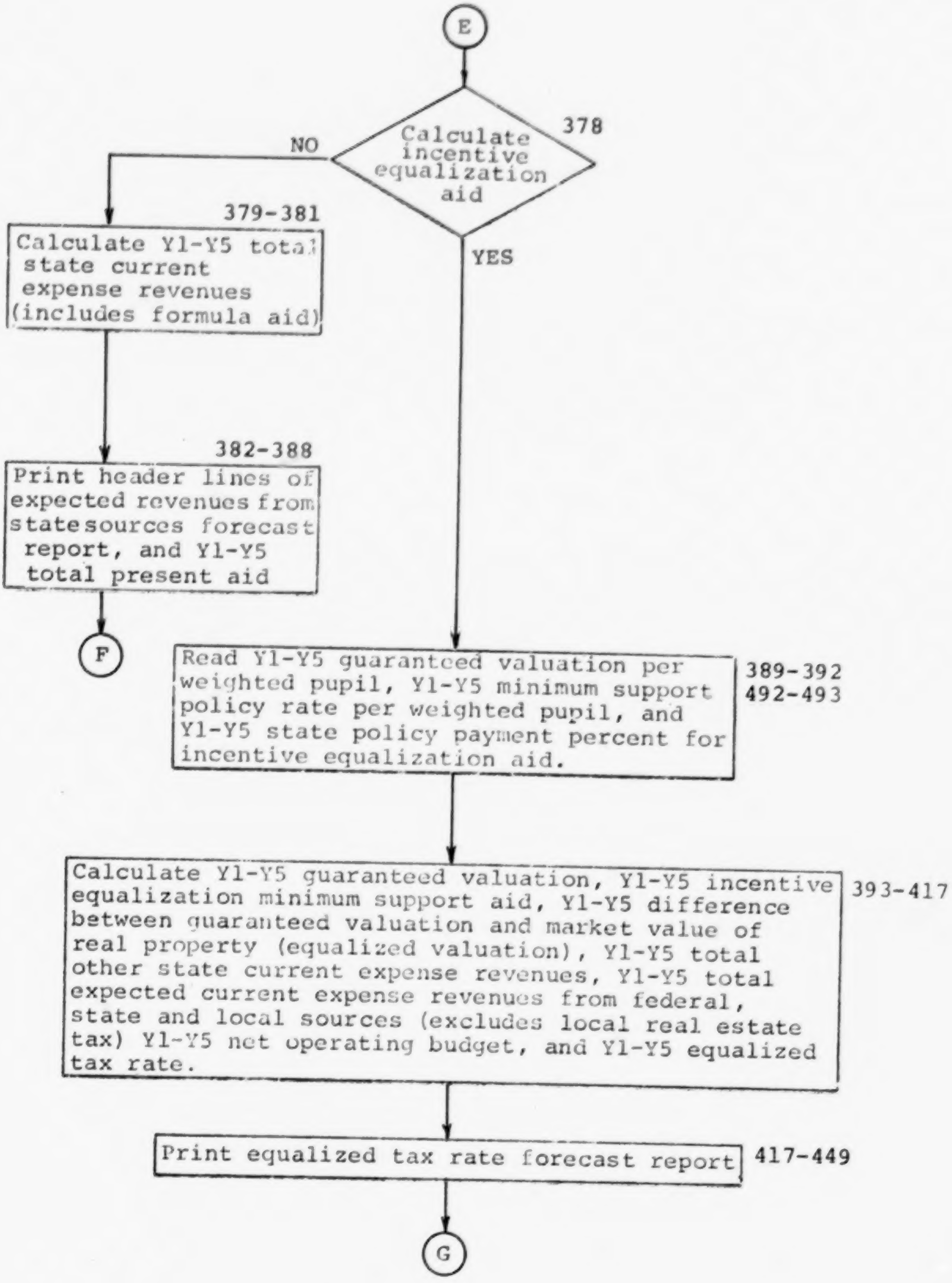

START
Read run date, number of yrs. in planning cycle number of enrollment classification in district number of years to be forecast, and other control data.
21-22
23-25
Basecase run or alternative case run
base case run
alternative case run
Read number of projects in alternative case, and project names in alternative case
26-29
Print cover sheet for alternative case run
30-35
Read district's enrollment classifications Case titles, years in forecast period district name, and incentive equalization aid pupil weights.
36-43
Initialize page and report number counters.
47
Read CY,C1-Y5 district real property market value Y1-Y5 assessment ratio, Y1-Y5 real estate tax, Y1-Y5 collection percent
46-49
Calculate Y1-Y5 taxable valuation, Y1-Y5 revenue per mill, Y1-Y5 real estate taxes levied, and Y1-Y5 total real estate tax at CY tax rate
50-59
Print real estate tax forecast report
60-82
Read CY and Y1-Y5 total transportation program costs, Y1-Y5 transportation program reimbursement percentage
83-86
A

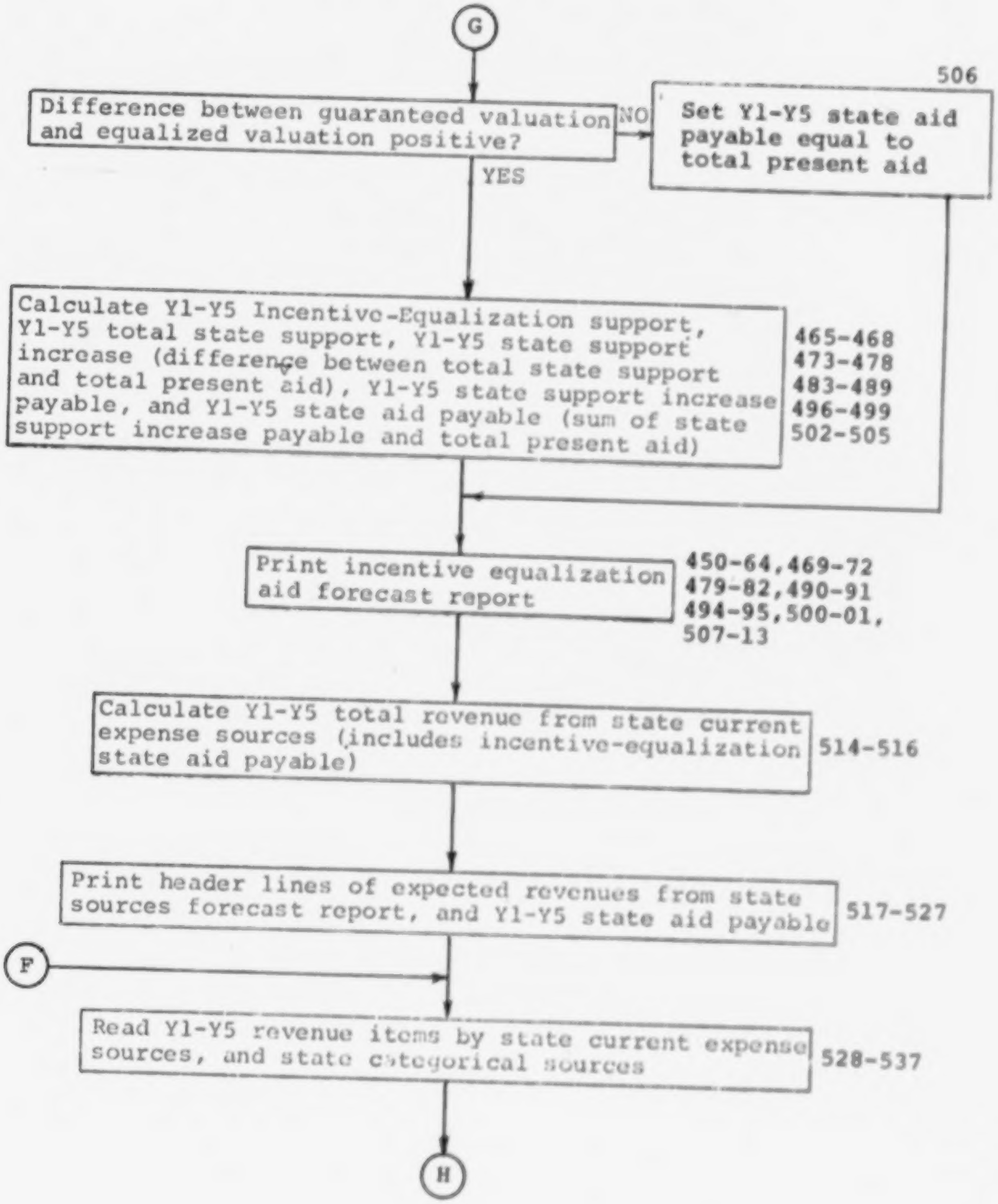

A
Calculate Y1-Y5 Base Case Transportation Aid
87-89
Base case or alternative case without CE transportation project
90
YES
Alternative case with CE transportation project
NO
Read Y1-Y5 alternative case current expense transportation costs
91-92
Calculate Y1-Y5 total current expense transportation costs for alternative case
93-95
Calculate Y1-Y5 added transportation aid revenues, and Y1-Y5 total transportation aid for alternative case
96-102
Base case or alternative with CE transportation project
103-104
NO
YES
Print transportation aid forecast report
105-126
Read CY-1,CY, and Y1-Y5 Base Case total current expense costs for special education program and Y1-Y5 atypical pupil aid reimbursement percent
127-130
B

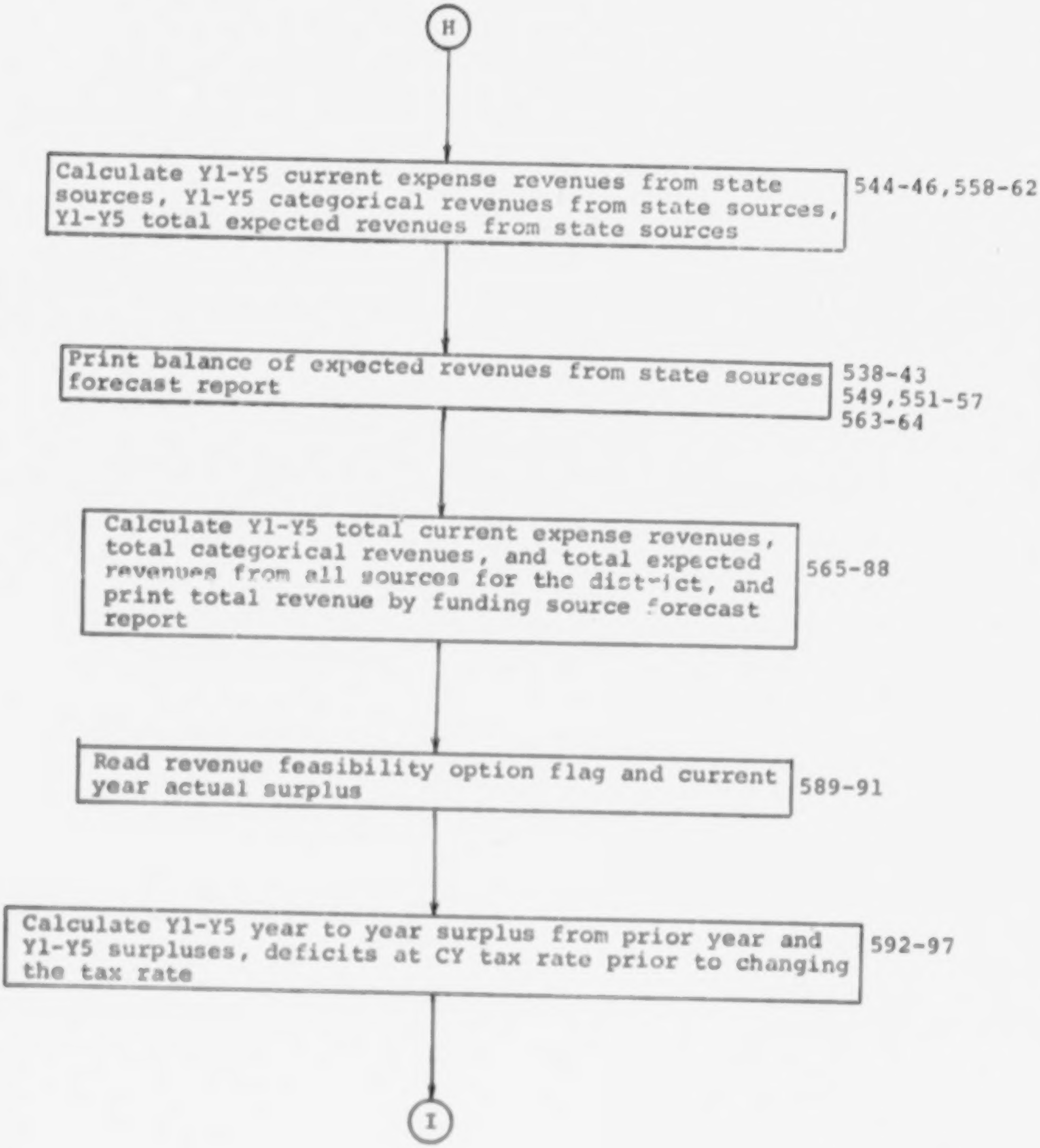

B
Calculate Y1-Y5 base case atypical pupil aid
131-133
Base case or alternative case without CE special education project
134
YES
Alternative case with CE special education project
NO
Read Y1-Y5 alternative case current expense special education costs
135
Calculate total Y1-Y5 alternative case current expense special education costs, and Y1-Y5 atypical pupil aid
136-139
Base case or alternative case with CE special education project
140-141
NO
YES
Print atypical pupil aid forecast report
142-157
C

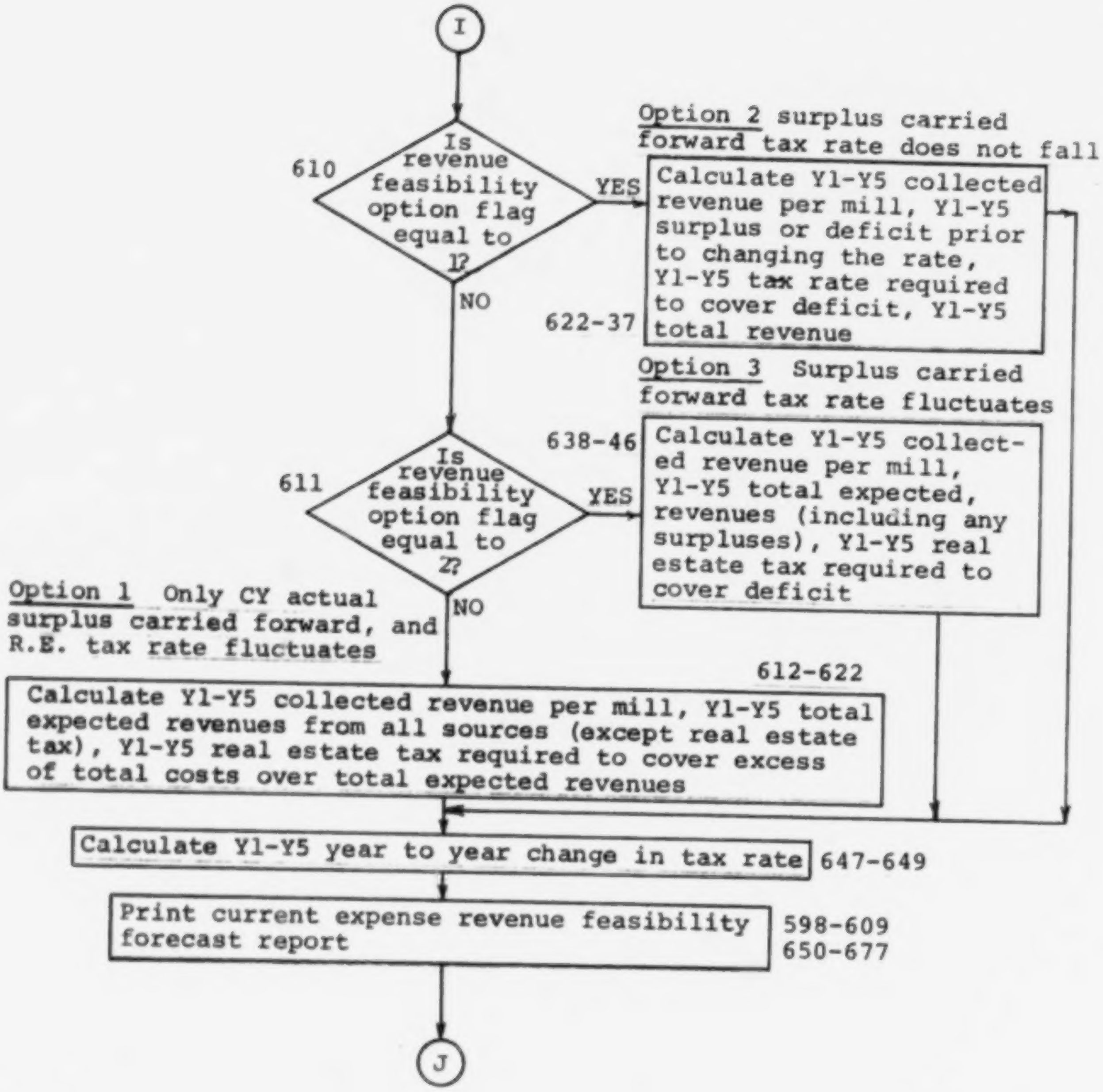

C
Read Y1-Y5 market value of Class II Railroad Property
166
Aggregate Class II Railroad Property market value plus market value of property in the district
167-169
170-178, 181-182
192-193, 207,
216
Read Y1-Y5 enrollment forecast by enrollment classification type, Y1-Y5 state foundation program rate per pupil, Y1-Y5 millage rate, Y1-Y5 minimum aid rate per pupil in formula aid calculation, Y1-Y5 policy rate per pupil for CH.301 L. 1968
Calculate Y1-Y5 foundation program amounts, Y1-Y5 local fair share, Y1-Y5 equalized aid, Y1-Y5 minimum aid used in formula aid calculation Y1-Y5 CH.301, L1968 AID
185-187,
194-195,
201-203,
208-210,
218-220
217-220
Equalized Aid Higher than minimum aid?
NO
221-223
Calculate Y1-Y5 total present aid as sum of minimum aid + CH. 301,L.1968 Aid
224-227
Calculate Y1-Y5 total present aid as sum of equalized aid and CH.301,L.1968 AID
Print formula aid forecast report
159-165, 179-180, 183-184
188-189, 190-191, 197-200
204-206, 211-215, 228-238
D

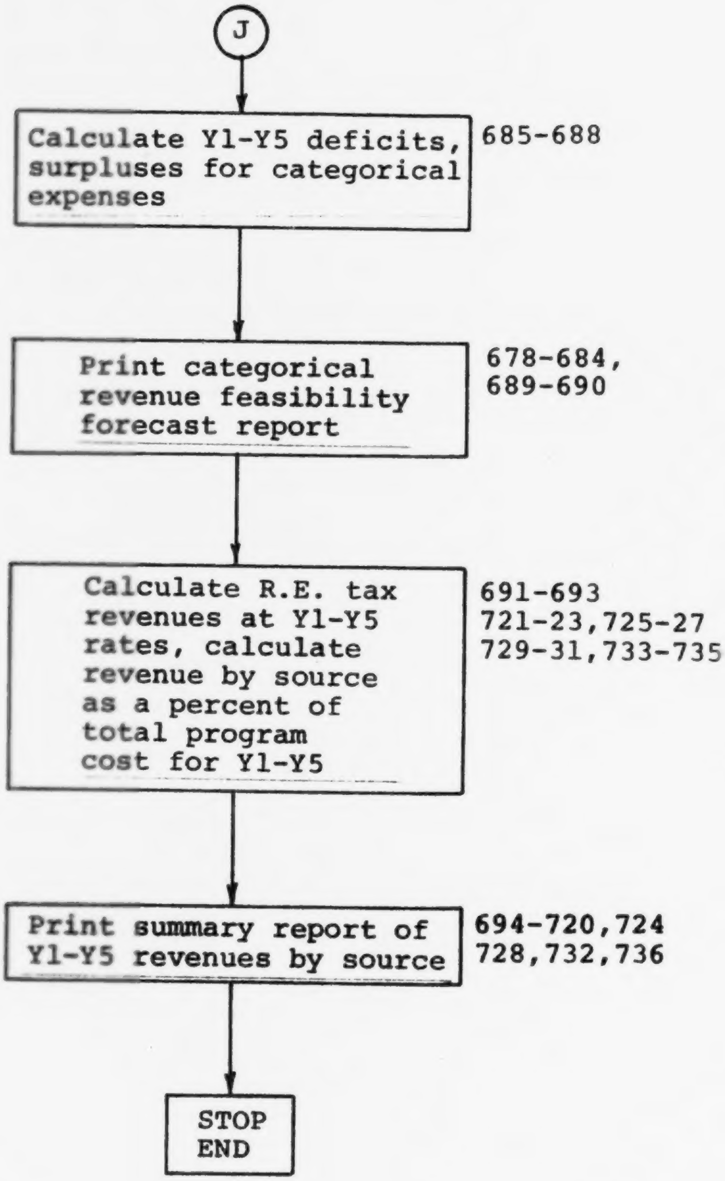

D
Read Y1-Y5 local revenue data by local revenue source
252-253
Calculate Y1-Y5 total other local revenue, and sum Y1-Y5 total other local revenue plus real estate tax revenues
248-251
254-255
258-262
268-271
Print total revenues all local sources forecast report
239-247
256-257
263-267
272-273
Read Y1-Y5 revenue items from federal sources
291
Calculate Y1-Y5 total revenue from federal current expense sources, total revenue from federal categorical sources, total revenues from federal sources, and print total revenue, all federal sources forecast report
274-331
Calculate Y1-Y5 weighted enrollment based upon enrollment forecast, and print weighted enrollment forecast report
332-362
Read Y1-Y5 expected revenues from current expense state sources (trans. and atypical pupil aid excluded), Y1-Y5 total current expense costs, and Y1-Y5 total categorical cost.
363-377
E


E
Calculate incentive equalization aid
378
NO
YES
379-381
Calculate Y1-Y5 total state current expense revenues (includes formula aid)
382-388
Print header lines of expected revenues from state sources forecast report, and Y1-Y5 total present aid
F
Read Y1-Y5 guaranteed valuation per weighted pupil, Y1-Y5 minimum support policy rate per weighted pupil, and Y1-Y5 state policy payment percent for incentive equalization aid.
389-392
492-493
Calculate Y1-Y5 guaranteed valuation, Y1-Y5 incentive equalization minimum support aid, Y1-Y5 difference between guaranteed valuation and market value of real property (equalized valuation), Y1-Y5 total other state current expense revenues, Y1-Y5 total expected current expense revenues from federal, state and local sources (excludes local real estate tax) Y1-Y5 net operating budget, and Y1-Y5 equalized tax rate.
393-417
Print equalized tax rate forecast report
417-449
G


G
Difference between guaranteed valuation and equalized valuation positive?
NO
506
Set Y1-Y5 state aid payable equal to total present aid
YES
Calculate Y1-Y5 Incentive-Equalization support, Y1-Y5 total state support, Y1-Y5 state support increase (difference between total state support and total present aid), Y1-Y5 state support increase payable, and Y1-Y5 state aid payable (sum of state support increase payable and total present aid)
465-468
473-478
483-489
496-499
502-505
Print incentive equalization aid forecast report
450-64,469-72
479-82,490-91
494-95,500-01,
507-13
Calculate Y1-Y5 total revenue from state current expense sources (includes incentive-equalization state aid payable)
514-516
Print header lines of expected revenues from state sources forecast report, and Y1-Y5 state aid payable
517-527
F
Read Y1-Y5 revenue items by state current expense sources, and state categorical sources
528-537
H


H
Calculate Y1-Y5 current expense revenues from state sources, Y1-Y5 categorical revenues from state sources, Y1-Y5 total expected revenues from state sources
544-46,558-62
Print balance of expected revenues from state sources forecast report
538-43
549,551-57
563-64
Calculate Y1-Y5 total current expense revenues, total categorical revenues, and total expected revenues from all sources for the district, and print total revenue by funding source forecast report
565-88
Read revenue feasibility option flag and current year actual surplus
589-91
Calculate Y1-Y5 year to year surplus from prior year and Y1-Y5 surpluses, deficits at CY tax rate prior to changing the tax rate
592-97
I


I
610
Is revenue feasibility option flag equal to 1?
YES
NO
Option 2 surplus carried forward tax rate does not fall
Calculate Y1-Y5 collected revenue per mill, Y1-Y5 surplus or deficit prior to changing the rate, Y1-Y5 tax rate required to cover deficit, Y1-Y5 total revenue
622-37
611
Is revenue feasibility option flag equal to 2?
YES
NO
Option 3 Surplus carried forward tax rate fluctuates
638-46
Calculate Y1-Y5 collected revenue per mill, Y1-Y5 total expected, revenues (including any surpluses), Y1-Y5 real estate tax required to cover deficit
Option 1 Only CY actual surplus carried forward, and R.E. tax rate fluctuates
612-622
Calculate Y1-Y5 collected revenue per mill, Y1-Y5 total expected revenues from all sources (except real estate tax), Y1-Y5 real estate tax required to cover excess of total costs over total expected revenues
Calculate Y1-Y5 year to year change in tax rate
647-649
Print current expense revenue feasibility forecast report
598-609
650-677
J


J
Calculate Y1-Y5 deficits, surpluses for categorical expenses
685-688
Print categorical revenue feasibility forecast report
678-684,
689-690
Calculate R.E. tax revenues at Y1-Y5 rates, calculate revenue by source as a percent of total program cost for Y1-Y5
691-693
721-23,725-27
729-31,733-735
Print summary report of Y1-Y5 revenues by source
694-720,724
728,732,736
STOP
END

LISTING OF THE REVENUE SIMULATOR COMPUTER PROGRAM

The REVSIM computer program listing, written in the FORTRAN IV programming language, is provided below. A variable dictionary follows the listing.

```
                C
                C THIS PROGRAM PROJECTS REVENUES BY SOURCE FOR EACH YEAR OF A FIVE YEAR PLANNING
                C HORIZON, AND AGGREGATES PROJECTED REVENUES BY SOURCE TO OBTAIN TOTAL REVENUES,
                C AND PRINTS REVENUE REPORTS BY SOURCE.
                C
                C
                C DECLARATION STATEMENTS
                C
0001                  REAL MVPPEP(6)
0002                  REAL TEMIN(5)
0003                  DIMENSION ETITLE(11,6),YTITLE(6),PUPWGT(10),ASSPCT(6)
0004                  DIMENSION ENRMLL(6),RESTTX(6),COLPCT(6),EVENUE(2,6)
0005                  DIMENSION TXVALU(6),TEMP(6),TEMP1(6),PROJNM(10,8),TXLEVR(6)
0006                  DIMENSION TRNPC(5),WKPCT(5),SPEDPC(5),TOTPA(5),SPEC(7)
0007                  DIMENSION PUPILS(9,5),IPUPIL(9,5),FORMLA(5),WORK1(5)
0008                  DIMENSION KOUNT(5),TITLE(6),EVALUE(5),OLCRVN(5),TEEVN(3,5)
0009                  DIMENSION POLCYR(2,5),GVAL(2,5),TSEVN(3,5),ECTAX(5),TOTREV(3,5)
0010                  DIMENSION TOTCST(3,6),DFICIT(2,6),COLRML(6),TAXCHG(5),OTHREV(5)
0011                  DIMENSION TEMP2(6)
0012                  COMMON DTITLE(6),CTITLE(4,6),IREPNO,RUNDT(3),IPGE,NALTC,NAFLAG
0013                  INTEGER H,T,E,CT
0014                  INTEGER ALPHA(4)/'B','C','N','P'/
                C
                C
                C PRINT TITLE SHEET
                C
                C
                C
0015                  WRITE(6,1)
0016                1 FORMAT('1',10(' '/),' ',57X,'REVENUE SIMULATION'/'0',41X,'SYSTEM F
                     1OR TRENTON''S EDUCATIONAL PLANNING(STEP)'/)
0017                  WRITE(6,2)
0018                2 FORMAT(10('0'/),' ',59X,'PREPARED BY'/' ',59X,'GOVERNMENT STUDIES
                     -AND SYSTEMS, INC.'/' ',59X,'3401 MARKET STREET'/' ',59X,'PHILADELP
                     -HIA, PENNSYLVANIA 19104'/)
0019                  WRITE(6,3)
0020                3 FORMAT('0',59X,'THIS PROJECT IS SUPPORTED THROUGH A GRANT BY'/' ',
                     -59X,'THE U.S. OFFICE OF EDUCATION,'/' ',59X,'NEW JERSEY DEPARTMENT
                     - OF EDUCATION'/' ',59X,'UNDER TITLE III, ESEA'/)
                C
                C
                C
                C
                C READ RUN DATE,NO. OF YEARS IN PLANNING PERIOD, NO. OF
                C ENROLLMENT CLASSIFICATIONS,NO. OF YEARS IN THE FORECAST PERIOD.
                C SET NAFLAG(BASE CASE IS 0, ALTERNATIVE CASE IS 1)
                C SET NALTC(NUMBER ASSIGNED TO ALTERNATIVE CASE).
                C SET NT(IS 0 IF BASE CASE OR ALTERNATIVE CASE WITHOUT A
                C CURRENT EXPENSE TRANSPORTATION PROJECT.IF ALTERNATIVE
                C WITH TRANSPORTATION PROJECT IS 1).
                C SET NC(SAME AS NT, EXCEPT APPLIES TO SPECIAL ED. OF PROJECTS).
```

```
                 C SET K EQUAL TO THE NUMBER OF YEARS TO BE FORECASTED.
                 C SET I B FLAG (0=CALCULATE INCENTIVE=EQUALIZATION =10)
                 C
                 C
                 C
 0021                  READ(5,25) RUNDT,H,NFCL,NF,NAFLAG,NALTC,NT,NS,K,IPFLAG
 0022              25 FORMAT(4X,3A4,I1,8I2)
                 C
                 C
                 C
                 C IF RUN IS BASE CASE SKIP TO STATEMENT 7. IF RUN
                 C IS ALTERNATIVE CASE, READ TOTAL NUMBER AND NAMES
                 C PROJECTS IN THE ALTERNATIVE CASE.
                 C
                 C
                 C
 0023                  IF (NAFLAG.EQ.0) GO TO 7
 0024                  READ(5,9) NP
 0025                9 FORMAT(40X,I2)
                 C
                 C
                 C READ IN ALTERNATIVE CASE PROJECT NAMES
                 C
                 C
 0026                  DO 12 N=1,NP
 0027                  READ(5,14)(PROJNM(N,J),J=1,9)
 0028              14 FORMAT(7X,9A4)
 0029              12 CONTINUE
                 C
                 C
                 C PRINT COVER SHEET FOR ALTERNATIVE CASE
                 C
                 C
 0030                  WRITE(6,1015) NALTC
 0031            1015 FORMAT('1','ALTERNATIVE CASE ',I2,
                      1' INCLUDES THE FOLLOWING PROJECTS:')
 0032                  DO 1025 N=1,NP
 0033                  WRITE(6,1020)(PROJNM(N,J),J=1,9)
 0034            1020 FORMAT('0',9A4)
 0035            1025 CONTINUE
                 C
                 C READ ENROLLMENT TITLES
                 C
 0036               7 READ(5,5)((ETITLE(I,J),J=1,6),I=1,NFCL)
 0037               5 FORMAT(2X,6A4)
                 C
                 C READ CASE TITLES
                 C
 0038                  READ(5,5) ((CTITLE(I,J),J=1,6),I=1,4)
                 C
                 C READ YEAR TITLES
```

```
                C
                C
0039                  READ(5,5)  (YTITLE(J),J=1,6)
                C READ DISTRICT NAME
                C
0040                  READ(5,5)  (DTITLE(I),I=1,6)
                C
                C READ PUPIL WEIGHTS(ORDER CORRESPONDS TO ORDER IN WHICH
                C  ETITLE CARDS INPUT)
                C
0041                  L=NECL-1
0042                  READ(5,20) (PUPWGT(I),I=1,L)
0043               20 FORMAT(2X,10F6.3)
                C
                C
0044                  IPGE=0
0045                  IRCPRD=999
                C
                C
                C READ CY TO Y5 DISTRICT MARKET VALUE OF REAL PROPERTY
                C AND Y1-Y5 ASSESSMENT RATIOS
                C
                C
0046                  READ(5,45)(MVRPRP(I),I=1,N),(ASSPCT(I),I=1,N)
0047               45 FORMAT(8X,4F10.0/8X,6F5.2)
                C
                C
                C READ CY REAL ESTATE TAX, COLLECTION PCT
                C
0048                  READ(5,70)(RESTTX(I),I=1,N),(COLPCT(I),I=1,N)
0049               70 FORMAT(8X,6F6.2/8X,6F6.2)
                C
                C CALCULATE  TAXABLE ASSESSED VALUE
                C
0050                  DO 60 I=2,N
0051                  TXVALU(I)=ASSPCT(I)*MVRPRP(I)
0052               60 CONTINUE
                C
                C CALCULATE REVENUE PER MILL
                C
0053                  DO 75 I=2,N
0054                  RVPMLL(I)=TXVALU(I)/1000.
                C
                C CALCULATE R.E. TAXES LEVIED
                C
0055                  TXLEVD(I)=RVPMLL(I)*RESTTX(I)
0056               75 CONTINUE
                C
                C
```

```
             C CALCULATE TOTAL REAL ESTATE TAX
             C
0057               DO 95 T=2,H
0058               RVENUE(1,T)=(COLPCT(T)/100.)*TXLEVD(T)
0059            95 CONTINUE
             C
             C
             C PRINT REAL ESTATE TAX FORECAST REPORT
             C
             C
0060               CALL TEST(2)
0061               WRITE(6,30)
0062            30 FORMAT(' ',53X,'TOTAL REAL ESTATE TAX')
0063               WRITE(6,35)
0064            35 FORMAT('0')
0065               WRITE(6,40)(YTITLE(T),T=2,H)
0066            40 FORMAT('0',55X,A4,4(13X,A4))
0067               WRITE(6,50) (MVRPRP(T),T=2,H)
0068            50 FORMAT('0','DIST. REAL PROPERTY MARKET VALUE',13X,F12.2,
                  14(5X,F12.2))
0069               WRITE(6,55) (ASSPCT(T),T=2,H)
0070            55 FORMAT('0','ASSESSMENT RATIO',36X,F5.3,4(12X,F5.3))
0071               WRITE(6,65) (TXVALU(T),T=2,H)
0072            65 FORMAT('0','TAXABLE ASSESSED VALUE',23X,F12.2,4(5X,F12.2))
             C
             C PRINT REVENUE PER MILL,CY TAX RATE,AND ASSESSED TAXES
             C
0073               WRITE(6,80)(RVPMLL(T),T=2,H)
0074            80 FORMAT('0','REVENUE PER MILL',29X,F12.2,4(5X,F12.2))
0075               WRITE(6,85) RESTTX(1)
0076            85 FORMAT(' ','CY R.E. TAX RATE IN MILLS',4X,F7.2)
0077               WRITE(6,90)(TXLEVD(T),T=2,H)
0078            90 FORMAT('0','TAXES LEVIED',33X,F12.2,4(5X,F12.2))
0079               WRITE(6,100)(COLPCT(T),T=2,H)
0080           100 FORMAT('0','COLLECTION PERCENT',27X,F12.2,4(5X,F12.2))
0081               WRITE(6,105)(RVENUE(1,T),T=2,H)
0082           105 FORMAT('0','TOTAL REAL ESTATE TAX AT C.Y. TAX RATE',7X,F12.2,
                  14(5X,F12.2))
             C
             C
             C READ CY AND Y1-Y5 TOTAL RC TRANSPORTATION COSTS INTO TEMP.
             C ONE YEAR TIME LAG IN REIMBURSEMENT OF TRANSPORTATION EXPENSES
             C
             C
0083           110 READ(5,120)(TEMP(T),T=1,H)
0084           120 FORMAT(8X,6F10.0)
             C
             C
             C READ TRANSPORTATION REIMB. PCT.SAVE IN WKPCT(T).
             C
             C
```

```
  0085              READ(5,130)(WKPCT(I),I=1,NF)
  0086          130 FORMAT(5X,5F6.2)
                C
                C
                C CALCULATE Y1-Y5 TRANSPORTATION AID REVENUES.
                C
                C
  0087              DO 140 I=1,NF
  0088              TEMPC(I)=(WKPCT(I)/100.)*TEMP(I)
  0089          140 CONTINUE
                C
                C DETERMINE IF ALT. CASE HAS TRANSP. CE PROJECT.
                C
  0090              IF(NT.EQ.0) GO TO 109
                C
                C READ ALT. CASE TRANSP. COSTS INTO TEMP1.
                C
  0091              READ(5,92)(TEMP1(I),I=2,M)
  0092           92 FORMAT(8X,6F9.0)
                C
                C AGGREGATE Y1-Y5 PC AND ALT. CASE CE TRANSP. COSTS
                C SAVE RESULTS IN TEMP.
                C
  0093              DO 137 I=2,M
  0094              TEMP(I)=TEMP(I)+TEMP1(I)
  0095          137 CONTINUE
                C
                C CALCULATE ALT. CASE ADDED REVENUE. IF TRANSP. EXPENSES
                C BEGIN IN YEAR T, EXPECTED TRANSP. AID REVENUES
                C OCCUR STARTING IN YEAR T+1(I=2 IS Y1)
                C
                C
  0096              DO 168 I=2,M
  0097              TEMP2(I)=TEMP1(I-1)*(WKPCT(I-1)/100.)
  0098          168 CONTINUE
                C
                C CALCULATE Y1-Y5 TOTAL TRANSP. AID.
                C
  0099              TEMP2(2)=0.0
  0100              DO 169 I=2,M
  0101              TEMPC(I-1)=TEMPC(I-1)+TEMP2(I)
  0102          169 CONTINUE
               C
               C
               C WRITE TRANSPORTATION AID FORECAST REPORT
               C
               C
  0103              IF(NT.EQ.1.AND.NAFLAG.EQ.1) GOTO 117
  0104          109 IF(NAFLAG.EQ.1) GO TO 121
  0105              CALL RTITLE(1,9)
  0106              GO TO 121
  0107               117 CALL TITLE(2,3)
  0108               123 WRITE(6,110)
  0109               110 FORMAT(' ',56X,'TRANSPORTATION AID')
  0110                   WRITE(6,36)
  0111                   WRITE(6,62)(YTITLE(I),I=1,H)
  0112                62 FORMAT('0',39X,A4,5(12X,A4))
  0113                   WRITE(6,125)(TEMP(I),I=1,H)
  0114               125 FORMAT('0','TOTAL TRANSPORTATION COSTS',2X,F12.2,6X,F12.2,
                        14(5X,F12.2))
  0115                   WRITE(6,135)(WKPCT(I),I=1,NF)
  0116               135 FORMAT('0','REIMBURSEMENT PERCENTAGE',21X,5(F12.2,5X))
  0117                   WRITE(6,145)(TEMPC(I),I=1,NF)
  0118               145 FORMAT('0','EXPECTED TRANSPORTATION AID $',16X,5(F12.2,5X))
  0119                   WRITE(6,44)
  0120                44 FORMAT('0','EXPECTED REVENUE BASED UPON ONE YEAR')
  0121                   WRITE(6,66)
  0122                66 FORMAT(' ','LAG FOR REIMBURSEMENT OF EXPENSES')
  0123                   DO 2000 I=1,H
  0124                   TEMPC(I)=0.0
  0125                   TEMP(I)=0.0
  0126              2000 CONTINUE
                   C
                   C
                   C READ BASE CASE OF SPECIAL EDUCATION COSTS FOR
                   C CY-1,CY,Y1-Y5. TWO YEAR TIME LAG IN REIMBURSEMENT
                   C OF EXPENSES FOR SPECIAL EDUCATION.
                   C
                   C
  0127               121 II=H+1
  0128                   READ(5,2050)(SPEC(I),I=1,II)
  0129              2050 FORMAT(8X,7F9.0)
                   C
                   C READ SPECIAL ED. REIMB. PCT.SAVE IN WKPCT(I).
                   C
  0130                   READ(5,130)(WKPCT(I),I=1,NF)
                   C
                   C
                   C CALCULATE Y1 TO Y5 BASE CASE ATYPICAL PUPIL AID.
                   C
                   C
  0131                   DO 160 I=1,NF
  0132                   SPEDPC(I)=(WKPCT(I)/100.)*SPEC(I)
  0133               160 CONTINUE
                   C
                   C
                   C DETERMINE IF ALT. CASE HAS OF SPEC. ED. PROJECT
                   C
                   C
  0134                   IF(NS.EQ.0) GO TO 124
                   C
                   C READ Y1-Y5 ALT. CASE OF SPEC ED PROJECT COSTS.
                   C
```

```
0135                   READ(5,92)(TEMP1(T),T=2,H)
             C
             C ADD BASE CASE COSTS TO ALT. CASE COSTS. CALCULATE
             C Y1-Y5 ALT. CASE ATYPICAL PUPIL AID
             C
0136                   DO 127 T=3,11
0137                   SPEC(T)=SPEC(T)+TEMP1(T-1)
0138                   SPEDPC(T-2)=SPEC(T-2)*(WKPCT(T-2)/100.)
0139               127 CONTINUE
0140                   IF(NS.EQ.1.AND.NAFLAG.EQ.1) GO TO 129
0141               124 IF (NAFLAG.EQ.1) GO TO 139
0142                   CALL PTITLE(1,3)
0143                   GO TO 133
0144               129 CALL PTITLE(2,3)
             C
             C PRINT ATYPICAL PUPIL AID FORECAST REPORT
             C
0145               133 WRITE(6,150)
0146               150 FORMAT(' ',56X,'ATYPICAL PUPIL AID')
0147                   WRITE(6,35)
0148                   WRITE(6,40)(YTITLE(T),T=2,H)
0149                   WRITE(6,155)(SPEC(T),T=3,11)
0150               155 FORMAT('0','TOTAL SPECIAL EDUCATION PROGRAM COSTS',6X,
                      15(F12.2,5X))
0151                   WRITE(6,135)(WKPCT(T),T=1,NF)
0152                   WRITE(6,165)(SPEDPC(T),T=1,NF)
0153               165 FORMAT('0','EXPECTED ATYPICAL PUPIL AID*',17X,5(F12.2,5X))
0154                   WRITE(6,166)
0155               166 FORMAT('0','*EXPECTED ATYPICAL PUPIL AID IN Y1-Y5')
0156                   WRITE(6,167)
0157               167 FORMAT(' ','CORRESPOND TO PROGRAM COSTS IN CY-1,CY,Y1-Y3.')
             C
             C
             C WRITE TITLE LINE 1-4 FOR FORMULA AID PROJECTION REPORT
             C
0158                   IF(NAFLAG.EQ.1) GO TO 139
0159                   CALL FTITLE(1,3)
0160                   GO TO 141
0161               139 CALL FTITLE(2,3)
0162               141 WRITE(6,170)
0163               170 FORMAT(' ',44X,'FORMULA AID CALCULATION-STATE SUBSIDY')
0164                   WRITE(6,35)
0165                   WRITE(6,40)(YTITLE(T),T=2,H)
             C
             C
             C
             C READ Y1-Y5 MARKET VALUE OF
             C CLASS II RAILROAD PROPERTY.
             C
             C
0166                   READ(5,605) (TEMP1(T),T=1,H)
```

```
                C
                C AGGREGATE CLASS II RE PROPERTY MARKET VALUE AND
                C MARKET VALUE OF LAND, IMPROVEMENTS, AND BUSINESS
                C PERSONALITY FOR USE IN STATE AID CALCULATIONS.
                C
  0167                DO 214 T=1,M
  0168                MVRPRP(T)=MVRPRP(T)+TEMPI(T)
  0169            214 CONTINUE
                C READ AND PRINT CY AND Y1 TO Y4 PROJECTED ENROLLMENTS BY TYPE BY YR AND
                C
  0170                DO 190 E=1,NECL
  0171                READ(5,175)(PUPILS(E,T),T=1,K)
  0172            175 FORMAT(10X,5F7.0)
  0173            190 CONTINUE
  0174                DO 195 T=1,K
  0175                DO 193 E=1,NECL
  0176                IPUPIL(E,T)=PUPILS(E,T)
  0177            193 CONTINUE
  0178            195 CONTINUE
  0179                WRITE(6,100)(IPUPIL(NECL,T),T=1,K)
  0180            100 FORMAT('0',' 1.  RESIDENT ENROLLMENT(RE) ',20X,I8,4(9X,I8))
                C
                C
                C READ FOUNDATION RATE PER STUDENT.
                C
                C
  0181                READ(5,195) (WKPCT(T),T=1,K)
  0182            195 FORMAT(5X,5F7.2)
  0183                WRITE(6,200)(WKPCT(T),T=1,K)
  0184            200 FORMAT('0',' 2.  FOUNDATION RATE PER PUPIL',19X,F8.2,4(9X,F8.2))
                C
                C CALCULATE AND PRINT FOUNDATION PROGRAM AMTS FOR Y1 TO Y5.
                C
  0185                DO 205 T=1,K
  0186                FORMLA(T)= PUPILS(NECL,T) * WKPCT(T)
  0187            205 CONTINUE
  0188                WRITE(6,210)(FORMLA(T),T=1,K)
  0189            210 FORMAT('0',' 3.  FOUNDATION PROGRAM(ITEM 1 X ITEM 2)',5X,F12.2,
                     14(5X,F12.2))
                C
                C PRINT MKT VALUE OF REAL PROPERTY FOR CY AND Y1 TO Y4.
                C
  0190                WRITE(6,215)(MVRPRP(T),T=1,K)
  0191            215 FORMAT('0',' 4.  EQUALIZED VALUE OF REAL PROPERTY',8X,F12.2,
                     14(5X,F12.2))
                C
                C READ MILLAGE RATE FOR Y1 TO Y5.
                C
  0192                READ(5,220)(WKPCT(T),T=1,K)
  0193            220 FORMAT(7X,5F7.5)
                C
```

```
            C CALCULATE AND PRINT LOCAL FAIR SHARE FOR Y1 TO Y5. PRINT MILLAGE RATE.
            C
  0194            DO 225 I=1,K
  0195            WORK1(I)=MVPERP(I)*WKPCT(I)
  0196        225 CONTINUE
  0197            WRITE(6,230) (WKPCT(I),I=1,K)
  0198        230 FORMAT('0',' 5.  MILLAGE RATE  ',26X,F12.5,4(5X,F12.5))
  0199            WRITE(6,235) (WORK1(I),I=1,K)
  0200        235 FORMAT('0',' 6.  LOCAL FAIR SHARE(ITEM 4 X ITEM 5)',7X,F12.2,
                 14(5X,F12.2))
            C
            C CALCULATE AND PRINT EQUALIZED AID FOR Y1 TO Y5 AS DIFFERENCE BETWEEN
            C FOUNDATION PROGRAM AND LOCAL FAIR SHARE.
            C
  0201            DO 240 I=1,K
  0202            WORK1(I)=FORMLA(I)-WORK1(I)
  0203        240 CONTINUE
  0204            WRITE(6,35)
  0205            WRITE(6,245) (WORK1(I),I=1,K)
  0206        245 FORMAT('0',' 7.  EQUALIZED AID(ITEM3-ITEM6)',14X,F12.2,

                 14(5X,F12.2))
            C
            C READ AND PRINT MINIMUM AID RATE PER PUPIL. CALCULATE AND PRINT MINIMUM AID.
            C 319.
  0207            READ(5,195)(WKPCT(I),I=1,K)
  0208            DO 250 I=1,K
  0209            FORMLA(I)=PUPILS(NECL,I)* WKPCT(I)
  0210        250 CONTINUE
  0211            WRITE(6,25)
  0212            WRITE(6,255)(WKPCT(I),I=1,K)
  0213        255 FORMAT('0',' 8.  POLICY RATE/PUPIL FOR MINIMUM AID',7X,F12.2,
                 14(5X,F12.2))
  0214            WRITE(6,260)(FORMLA(I),I=1,K)
  0215        260 FORMAT('0',' 9.  MINIMUM AID(ITEM 1 X ITEM 8)',12X,F12.2,
                 14(5X,F12.2))
            C
            C READ POLICY RATE PER PUPIL FOR CH. 301, L. 1968.
            C
  0216            READ(5,195)(WKPCT(I),I=1,K)
            C
            C TEST FOR FORMULA AID AMT:HIGHER OF EQUALIZED AID OR MINIMUM AID
            C
  0217            DO 275 I=1,K
  0218            IF(WORK1(I)-FORMLA(I)) 275,275,270
  0219        270 FORMLA(I)=WORK1(I)
  0220        275 CONTINUE
            C
            C CALCULATE CH. 301 ADDITIVE.
            C
  0221            DO 280 I=1,K
  0222            WORK1(I)=PUPILS(NECL,I) * WKPCT(I)
```

```
0223          290 CONTINUE
              C
              C CALCULATE TOTAL PRESENT AID AS SUM OF FORMULA AID AND CH 301 ADDITIVE.
              C
0224              DO 295 I=1,K
0225              TOTPA(I)=0.0
0226              TOTPA(I)=FORMLA(I) + WORK1(I)
0227          295 CONTINUE
              C
              C PRINT FORMULA AID
              C
0228              WRITE(6,35)
0229              WRITE(6,290) (FORMLA(I),I=1,K)
0230          290 FORMAT('0',' 10. FORMULA AID(HIGHER OF ITEM 7 OR 9)',6X,F12.2,
                 1 4(5X,F12.2))
              C
              C PRINT CH. 301  PER PUPIL POLICY RATE.
              C
0231              WRITE(6,35)
0232              WRITE(6,295)(WPCT(I),I=1,K)
0233          295 FORMAT('0',' 11. POLICY RATE/PUPIL FOR CH. 301, L.1968',3X,F12.2,
                 1 4(5X,F12.2))
              C
              C PRINT CH. 301 ADDITIVE
              C
0234              WRITE(6,300) (WORK1(I),I=1,K)
0235          300 FORMAT('0',' 12. ITEM 1 X ITEM 11', 24X,F12.2,4(5X,F12.2))
0236              WRITE(6,35)
              C
              C
              C PRINT TOTAL PRESENT AID FORECAST LINE.
              C
              C
0237              WRITE(6,305) (TOTPA(I),I=1,K)
0238          305 FORMAT('0',' 13. TOTAL PRESENT AID(ITEM 10 + ITEM 12)',6X,F12.2,
                 1 4(5X,F12.2))
              C
              C
              C TEST IF REVENUE FORECAST RUN IS BASE CASE
              C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
              C
              C
0239              CALL TESTAN
0240              WRITE(6,315)
0241          315 FORMAT(' ',41X,'TOTAL REVENUE, ALL LOCAL SOURCES')
0242              WRITE(6,35)
0243              WRITE(6,[illegible])(TITLE(I),I=2,M)
0244              WRITE(6,[illegible]) (REVENU(I,1),I=2,M)
0245          [illegible] FORMAT('0',' TOTAL REAL ESTATE TAX',21X,F12.2,4(5X,F12.2))
0246              WRITE(6,[illegible])
0247          [illegible] FORMAT('0',' OTHER LOCAL SOURCES')
```

```
      C
      C INITIALIZE CARD COUNTER AND NO OF LOCAL SOURCE ITEMS READ.
      C
0248        KOUNT(1)=0
      C
      C INITIALIZE OLCRVN(I) ARRAY.
      C
0249        DO 337 I=1,6
0250        OLCRVN(I)=0.0
0251    337 CONTINUE
      C
      C READ LOCAL REVENUE DATA FOR 81 TO 86 BY SOURCE.
0252    338 READ(5,333) CC,(TITLE(I),I=1,5),(TVALUE(I),I=1,6)
0253    333 FORMAT(A4,5A4,6F11.0)
0254        IF(CC.EQ.BLANK(1)) GO TO 339
0255        KOUNT(1)=KOUNT(1)+1
0256        WRITE(6,340) (TITLE(I),I=1,5),(TVALUE(I),I=1,6)
0257    340 FORMAT(1H ,5X,5A4,22X,F12.2,6(5X,F12.2))
      C
      C
      C KEEP RUNNING TOTAL OF OTHER LOCAL REVENUE FOR 81 TO 86. EXCLUDES REVENUE
      C FROM REAL ESTATE TAX.
      C
0258        DO 341 I=1,6
0259        OLCRVN(I)=OLCRVN(I) + TVALUE(I)
0260    341 CONTINUE
0261        GO TO 338
0262    339 IF(KOUNT(1).GT.0) GO TO 342
0263        WRITE(6,343)
0264    343 FORMAT(1H ,10X,'NO OTHER LOCAL REVENUE ITEMS ESTIMATED')
0265        GO TO 344
0266    342 WRITE(6,344)(OLCRVN(I),I=1,6)
0267    344 FORMAT(1H0,' TOTAL, OTHER LOCAL SOURCES',19X,F12.2,6(5X,F12.2))
      C
      C CALCULATE SUM OF TOTAL RE EST TAX AND TOTAL, OTHER LOCAL SOURCES.
      C
0268    346 DO 345 I=1,6
0269        WTRVN(I)=0.0
0270        WTRVN(I)=WTRVN(I,7)+OLCRVN(I)
0271    345 CONTINUE
      C
      C PRINT TOTAL REVENUE, ALL LOCAL SOURCES
      C
0272        WRITE(6,346) (WTRVN(I),I=1,6)
0273    346 FORMAT(1H0,' TOTAL REVENUE, ALL LOCAL SOURCES',17X,F12.2,
           16(5X,F12.2))
      C
      C INITIALIZE [illegible] ARRAY.
      C
0274        DO 347 I=1,6
0275        DO 347 J=1,7
```

```
0276              TRRVN(I,T)=0.0
0277        367 CONTINUE
0278        368 CONTINUE
          C
          C
          C TEST IF REVENUE FORECAST RUN IS BASE CASE
          C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
          C
          C
0279              CALL TEST(3)
          C
          C
          C WRITE LINES 1 TO 6 FOR REPORT OF FEDERAL FUNDS PROJECTIONS
          C
          C
0280              WRITE(6,370)
0281        370 FORMAT(' ',44X,'TOTAL REVENUE ALL FEDERAL SOURCES')
0282              WRITE(6,35)
0283              WRITE(6,40)(YTITLE(I),I=2,H)
0284              WRITE(6,375)
0285        375 FORMAT(' ',5X,'CURRENT EXPENSE SOURCES')
          C
          C INITIALIZE CARD COUNTER FOR NO. OF FEDERAL CURRENT EXPENSE REV. ITEMS
          C AND NO. OF FEDERAL CATEGORICAL REVENUE ITEMS
0286              KOUNT(2)=0
0287              KOUNT(3)=0
          C ZERO RVALUE(T) ARRAY IN PREPARATION FOR READING CE FEDERAL REV. ITEMS
          C
0288        377 DO 380 T=1,K
0289              RVALUE(T)=0.0
0290        380 CONTINUE
          C
          C READ FEDERAL CE REVENUE CARDS (CT=R)
          C
0291        385 READ(5,390)CT,(TITLE(I),I=1,5),(RVALUE(T),T=1,K)
0292              IF(CT.EQ.ALPHA(3)) GO TO 500
0293              IF(CT.EQ.ALPHA(1)) GO TO 415
0294              IF(CT.EQ.ALPHA(2)) GO TO 405
          C MAINTAIN COUNT OF CE FED FUND CARDS AND PRINT CE FEDERAL FUND ITEM.
0295              KOUNT(2) = KOUNT(2) + 1
0296              WRITE(6,395)(TITLE(I),I=1,5),(RVALUE(T),T=1,K)
          C
          C KEEP RUNNING TOTAL OF CE FEDERAL FUNDS FOR Y1 TO Y5
          C
0297              DO 400 T=1,K
0298              TRRVN(1,T)=TRRVN(1,T)+RVALUE(T)
0299        400 CONTINUE
0300              GO TO 377
          C
          C MAINTAIN COUNT OF CATEGORICAL FED REV. ITEMS AND PRINT.
          C
```

```
 0301          405 IF(KOUNT(3).NE.0) GO TO 408
 0302              WRITE(6,406)
 0303          406 FORMAT('0',' CATEGORICAL FUNDS')
 0304          408 KOUNT(3)=KOUNT(3)+1
 0305              WRITE(6,340) (TITLEF(I),I=1,5),(FVALUE(T),T=1,K)
               C
               C KEEP RUNNING TOTAL OF CATEGORICAL FEDERAL FUNDS FOR Y1 TO Y5.
               C
 0306              DO 410 T=1,K
 0307              TFRVN(2,T)=TFRVN(2,T)+FVALUE(T)
 0308          410 CONTINUE
 0309              GO TO 377
               C
               C PRINT TOTAL OF FEDERAL FUNDS FOR Y1 TO Y5.
               C
 0310          415   IF (KOUNT (2).GT.0) GO TO 417
 0311              WRITE (6,402)
 0312          402   FORMAT ('0', 10X,'NO CURRENT EXPENSE REVENUE ITEMS ESTIMATED')
 0313              GO TO 377
 0314          417 WRITE(6,420)(TFRVN(1,T),T=1,K)
 0315          420 FORMAT('0',' TOTAL, CURRENT EXPENSE FUNDS',16X,F12.2,4(5X,F12.2))
 0316              GO TO 377
 0317          500   IF (KOUNT (3).GT.0) GO TO 422
 0318              WRITE (6,406)
 0319              WRITE (6,412)
 0320          412   FORMAT ('0',10X,'NO CATEGORICAL REVENUE ITEMS ESTIMATED')
 0321              GO TO 444
               C
               C PRINT TOTAL CATEGORICAL FEDERAL FUNDS FOR Y1 TO Y5.
               C
 0322          422   WRITE(6,430) (TFRVN(2,T),T=1,K)
 0323          430 FORMAT('0',' TOTAL CATEGORICAL FUNDS',21X,F12.2,4(5X,F12.2))
               C
               C CALCULATE AND PRINT SUM OF FEDERAL CURRENT EXPENSE AND CATEGORICAL REVENUES
               C
 0324          444   DO 445 T=1,K
 0325              DO 440 I=1,2
 0326              TFRVN(3,T)=TFRVN(3,T)+TFRVN(I,T)
 0327          440 CONTINUE
 0328          445 CONTINUE
               C
               C
               C PRINT REVENUE TOTAL FROM ALL FEDERAL SOURCES FOR Y1 TO Y5.
               C
               C
 0329              WRITE(6,35)
 0330              WRITE(6,450) (TFRVN(3,T),T=1,K)
 0331          450 FORMAT('0',' TOTAL REVENUE, ALL FEDERAL SOURCES',10X,F12.2,
                  14(5X,F12.2))
               C
               C
               C CALCULATE WEIGHTED ENROLLMENT BY ENROLLMENT TYPE.ZERO OUT PUPILS(NECL,T).
```

```
                 C
                 C
0332                   DO 495 T=1,K
0333                   DO 490 E=1,L
0334                   PUPILS(E,T) = PUPILS(E,T) * PUPWGT(E)
0335               490 CONTINUE
0336                   PUPILS(NECL,T)=0.0
0337               495 CONTINUE
                 C
                 C
                 C AGGREGATE WEIGHTED ENROLLMENT BY FORECAST YEAR
                 C
                 C
0338                   DO 495 T=1,K
0339                   DO 490 E=1,L
0340                   PUPILS(NECL,T)=PUPILS(NECL,T)+PUPILS(E,T)
0341               490 CONTINUE
0342               495 CONTINUE
                 C
                 C
                 C
                 C TEST IF REVENUE FORECAST RUN IS BASE CASE
                 C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
                 C
                 C
0343                   CALL TEST(3)
0344                   WRITE(6,455)
0345               455 FORMAT(' ','ENROLLMENT DATA USED AS INPUT TO FORMULA AND INCENTIVE
                      1-EQUALIZATION CALCULATIONS')
0346                   WRITE(6,35)
0347                   WRITE(6,460)
0348                   WRITE(6,40) (YTITLE(T),T=2,H)
0349               460 FORMAT(' ',42X,'ENROLLMENT FORECAST BY ENROLLMENT TYPE BY YEAR')
0350                   WRITE(6,465)
0351               465 FORMAT('0',' ENROLLMENT TYPE')
                 C
                 C PRINT ENROLLMENT INPUT DATA BY ENROLLMENT TYPE(HATCHAN CLASSIFICATIONS).
                 C
0352                   DO 475 E=1,NECL
0353                   WRITE(6,470) (ETITLE(E,J),J=1,6),(IPUPIL(E,T),T=1,K)
0354               470 FORMAT(' ',3X,6A4,22X,I3,4(9X,I6))
0355               475 CONTINUE
                 C
                 C PRINT WEIGHTED ENROLLMENT BY TYPE BY YEAR.
                 C
0356                   WRITE(6,505)
0357               505 FORMAT('0',42X,'WEIGHTED ENROLLMENT  BY ENROLLMENT TYPE BY YEAR')
0358                   WRITE(6,40)(YTITLE(T),T=2,H)
0359                   DO 510 E=1,NECL
0360                   WRITE(6,510)(ETITLE(E,J),J=1,6),(PUPILS(E,T),T=1,K)
0361               510 FORMAT('0',3X,6A4,21X,F9.2,4(8X,F9.2))
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  0362           515 CONTINUE
             C
             C INITIALIZE TSRVN(I,T) ARRAY
             C
  0363                DO 560 T=1,K
  0364                DO 555 I=1,2
  0365                TSRVN(I,T)=0.0
  0366           555 CONTINUE
  0367           560 CONTINUE
             C
             C READ TOTAL OTHER OF STATE SOURCES FOR Y1 TO Y5.
             C EXCLUDE TRANSP. AID AND ATYPICAL PUPIL AID
             C
  0368                READ(5,565) (TSRVN(1,T),T=1,K)
  0369         565    FORMAT (10X,5F10.0)
             C
             C INITIALIZE ARRAY TO SAVE TOTAL COST DATA FOR CURRENT
             C EXPENSE(1,T),CATEGORICAL(2,T), AND TOTAL COST(3,T)

             C
             C
  0370                DO 602 T=1,H
  0371                DO 601 I=1,3
  0372                TOTCST(I,T)=0.0
  0373           601 CONTINUE
  0374           602 CONTINUE
             C
             C READ OPERATING BUDGET(CURRENT EXPENSE COSTS) FOR Y1-Y5.
             C COSTS ARE Y1-Y5 BASE CASE COSTS FOR BC RUN, OR SUM OF BC AND AC COSTS,
             C ALTERNATIVE CASE RUN, WHICHEVER IS APPROPRIATE.
             C
             C
             C
  0375                READ(5,605)(TOTCST(1,T),T=1,H)
  0376           605 FORMAT(8X,5F10.0)
             C
             C INPUT Y1-Y5 TOTAL CATEGORICAL COSTS
             C COSTS ARE FOR BC, OR SUM OF BC AND AC COSTS
             C IF RUN IS ALTERNATIVE CASE, AS APPROPRIATE.
             C
  0377                READ(5,605) (TOTCST(2,T),T=1,H)
             C
             C
             C
             C TEST IF INCENTIVE-EQUALIZATION AID IS TO BE COMPUTED(IDFLAG=0)
             C
             C
  0378                IF(IDFLAG.EQ.0) GO TO 516
             C
             C CALCULATE SUM OF OF STATE AID.
             C
             C
```

```
 0379              DO 442 I=1,10
 0380              TREVN(1,I)=TSRVN(1,I)+TOTPA(I)+TSNOC(I)+SPENDF(I)
 0381          442 CONTINUE
             C
             C TEST IF REVENUE FORECAST RUN IS BASE CASE
             C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
             C
 0382              CALL TEST(3)
             C
             C WRITE STATE REVENUE FORECAST REPORT
             C
 0383              WRITE(6,775)
 0384              WRITE(6,6[illegible])
 0385              WRITE(6,178)
 0386              WRITE(6,701) (TOTPA(I),I=1,10)
 0387          701 FORMAT(1H0,'   TOTAL PRESENT AIDS',2X,F12.2,41X,F12.2))
 0388              GO TO 787
             C
             C READ IN GUARANTEED VALUATION PER WGHTD PUPIL FOR V1 TO V5.
             C BASED UPON CLASSIFICATION ASSUMPTION FOR V1 TO V5.
             C
 0389          616 READ(5,617) (QPLCWS(1,J),J=1,6)
 0390          617 FORMAT(7X,6F10.2)
             C
             C READ IN MINIMUM SUPPORT AID POLICY RATE
             C
 0391              READ(5,618) (QPLCWS(2,J),J=1,6)
 0392          618 FORMAT(7X,6F10.2)
             C
             C CALCULATE GUARANTEED VALUATION FOR V1 TO V5
             C
 0393              DO 571 J=1,6
 0394              QVAL(1,J)=PUPILS(N,J) * QPLCWS(1,J)
 0395          571 CONTINUE
             C
             C CALCULATE MINIMUM SUPPORT AID
             C
 0396              DO 433 J=1,6
 0397              [illegible]= PUPILS(N,J)* QPLCWS(2,J)
 0398          433 CONTINUE
             C
             C CALCULATE DIFFERENCE BETWEEN GUARANTEED
             C VALUATION AND EQUALIZED VALUATION FOR V1 TO V5.
             C
 0399              DO 437 J=1,6
 0400              DVAL(1,J)=QVAL(1,J)-[illegible](J)
 0401          437 CONTINUE
             C
             C DETERMINE IF DVAL(1,J) IS NEGATIVE.
             C [illegible]
             C
```

```
0402            DO 531 I=1,K
0403            IF(GVAL(2,I))529,529,531
0404        529 GVAL(2,I)=0.0
0405        531 CONTINUE
          C
          C CALCULATE TOTAL STATE CF REVENUES,
          C EXCLUDING REVENUE FROM LOCAL TAXES.
          C
0406            DO 530 I=1,K
0407            TSRVN(1,I)=TSRVN(1,I)+TSNPC(I)+SPEDPC(I)
0408        530 CONTINUE
          C
          C CALCULATE SUM OF MINIMUM SUPPORT AND OF REVENUES FROM LOCAL
          C STATE, AND FEDERAL SOURCES.LOCAL TAX REVENUES EXCLUDED.
          C
0409            DO 528 I=1,K
0410            SUPRT(I)=MIN(I)+LCRVN(I)+TSRVN(1,I)+TFRVN(1,I)
0411        528 CONTINUE
          C
          C CALCULATE NET OPERATING
          C BUDGET FOR Y1 TO Y5.
          C
0412            DO 615 I=1,K
0413            NVALUE(I)=TOTCST(1,I+1)-SUPRT(I)
0414        615 CONTINUE
          C
          C CALCULATE EQUALIZED
          C TAX RATE FOR Y1 TO Y5.
          C
0415            DO 647 I=1,K
0416            ETRATE(I)=(NVALUE(I)/(GVAL(1,I)/100.))
0417        647 CONTINUE
          C
          C TEST IF REVENUE FORECAST RUN IS BASE CASE
          C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
          C
0418            CALL TEST(3)
          C
          C PRINT TITLE LINES AND EQUALIZED TAX RATE REPORT.
          C
0419            WRITE(6,890)
0420        890 FORMAT(1H ,4,35X,'EQUALIZED SCHOOL TAX RATE - STATE INCENTIVE-EQUALI
               1ZATION PLAN')
0421            WRITE(6,70)
0422            WRITE(6,60)(YTITLE(I),I=2,6)
          C
          C PRINT TOTAL WEIGHTED ENROLLMENT FOR Y1 TO Y5.
          C
0423            WRITE(6,535)(WPUPIL(NSCL,I),I=1,K)
0424        535 FORMAT(1H ,' 1. WEIGHTED ENROLLMENTS',23X,F10.2,4(7X,F10.2))
          C
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FORTRAN IV G LEVEL  21               MAIN              DATE = [illegible]        [illegible]              PAGE [illegible]
                    C PRINT IN MINIMUM SUPPORT AID POLICY
                    C RATE PER WEIGHTED PUPIL.
                    C
 0425                     WRITE(6,535) (POLRATE(T),T=1,K)
 0426                 535 FORMAT(1H0,'  2. POLICY RATE PER WEIGHTED PUPIL',16X,F6.2,
                         14(11X,F6.2))
 0427                     WRITE(6,540)
 0428                 540 FORMAT(1H0,' CURRENT REVENUE(CURRENT EXPENSE SOURCES):')
                    C
                    C PRINT MINIMUM SUPPORT AID
                    C
 0429                     WRITE(6,545) (ITEMAID(T),T=1,K)
 0430                 545 FORMAT(1H0,'      MINIMUM SUPPORT(ITEM 1 X ITEM 2)',19X,F12.2,
                         14(7X,F12.2))
                    C
                    C PRINT CURRENT EXPENSE REVENUES BY TYPE FOR Y1 TO Y5.
                    C PRINT TOTAL CURRENT EXPENSE REVENUES FOR Y1 TO Y5.
                    C
 0431                     WRITE(6,550) (LOCLREV(T),T=1,K)
 0432                 550 FORMAT(1H ,'      LOCAL FUNDS(EXCEPT LOCAL TAX REVENUES)',6X,F12.2,
                         14(7X,F12.2))
 0433                     WRITE(6,555) (FEDREV(T),T=1,K)
 0434                 555 FORMAT(1H ,'      FEDERAL FUNDS',27X,F12.2,4(7X,F12.2))
 0435                     WRITE(6,560) (STAREV(T),T=1,K)
 0436                 560 FORMAT(1H ,'      STATE FUNDS',29X,F12.2,4(7X,F12.2))
 0437                     WRITE(6,565)(WORKS(T),T=1,K)
 0438                 565 FORMAT(1H ,'  3. TOTAL',35X,F12.2,4(5X,F12.2))
 0439                     WRITE(6,570)
 0440                 570 FORMAT(1H0,' TAX RATE COMPUTATIONS:')
 0441                     WRITE(6,575)(EXPBUD(T),T=1,K)
 0442                 575 FORMAT(1H ,'  4. CURRENT EXPENSE BUDGET',18X,F12.2,4(7X,F12.2))
 0443                     WRITE(6,580)(VALUE(T),T=1,K)
 0444                 580 FORMAT(1H ,'  5. NET REQUIRED FUNDS(ITEM4-ITEM3)',7X,F12.2,
                         14(7X,F12.2))
                    C
                    C PRINT GUARANTEED VALUATION FOR Y1 TO Y5.
                    C
 0445                     WRITE(6,585) (GVAL(T),T=1,K)
 0446                 585 FORMAT(1H ,'  6. GUARANTEED VALUATION',27X,F12.2,4(7X,F12.2))
 0447                     WRITE(6,590)
 0448                     WRITE(6,595)(TAXRATE(T),T=1,K)
 0449                 595 FORMAT(1H ,'  7. RESTRICTED EQUALIZED TAX RATE-PCT(5/6)',4X,
                         1F[illegible].2,4(7X,F12.2))
                    C
                    C [illegible]
                    C [illegible]
                    C
 0450                     CALL [illegible]
                    C
                    C PRINT [illegible]
                    C [illegible]
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```
[illegible]      C
[illegible]            WRITE(6,[illegible])
[illegible]      [illegible] FORMAT([illegible],'STATE INCENTIVE-EQUALIZATION AID')
[illegible]            WRITE(6,[illegible])(TITLE(I),I=2,4)
                 C
                 C PRINT FOLLOWING:FIGURES ENROLLMENT, VALUATION/PUPIL,[illegible]
                 C VALUATION,[illegible], AND EQUALIZED TAX RATE.
                 C
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] VALUATION/PUPIL ASSUMPTION',[illegible])
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] VALUATION[illegible] & [illegible],F12.2,
[illegible]           [illegible])
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] EQUALIZED VALUATION',[illegible],F12.2,[illegible],F12.2))
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] EXCESS OF [illegible] = [illegible],F12.2,
[illegible]           [illegible])
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] EQUALIZED TAX RATE',[illegible],F7.2,[illegible],F7.2))
                 C
                 C [illegible]
                 C [illegible]
                 C
[illegible]            DO [illegible]
[illegible]            [illegible]
[illegible]      [illegible] [illegible]
[illegible]      [illegible] CONTINUE
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] INCENTIVE-EQUALIZATION SUPPORT[illegible],
[illegible]           [illegible])
                 C
                 C [illegible]
                 C
[illegible]            WRITE(6,[illegible])([illegible])
[illegible]      [illegible] FORMAT([illegible] STATE SUPPORT AID',[illegible],F12.2,[illegible],F12.2))
                 C
                 C CLEAR [illegible] TO ACCUMULATE.
                 C
[illegible]            DO [illegible]
[illegible]            [illegible]
[illegible]      [illegible] CONTINUE
                 C
                 C [illegible] STATE SUPPORT AS THE
                 C [illegible]
                 C
[illegible]            DO [illegible]
[illegible]            [illegible]
[illegible]      [illegible] CONTINUE
                 C
                 C [illegible] STATE SUPPORT [illegible]
                 C [illegible]
                 C
```

```
[illegible]        [illegible](I),I=1,K)
[illegible]    [illegible] FORMAT('0',' [illegible] TOTAL STATE SUPPORT(I) [illegible] = [illegible],F12.2,
               1(4X,F12.2))
[illegible]        [illegible](I),I=1,K)
[illegible]    [illegible] FORMAT('0',' [illegible] PRESENT [illegible] = [illegible],F12.2,
               1(4X,F12.2))
           C
           C CLEAR OUT [illegible] TO USE AS SAVE AREA FOR DIFFERENCE BETWEEN
           C      [illegible] STATE SUPPORT [illegible] AND [illegible] PRESENT [illegible]
           C
[illegible]        DO [illegible] I=1,K
[illegible]        [illegible](I)=0.
[illegible]    [illegible] CONTINUE
           C
           C CALCULATE DIFFERENCE BETWEEN TOTAL STATE SUPPORT(I)
           C AND [illegible] PRESENT [illegible] TO DETERMINE STATE SUPPORT INCREASE
           C
[illegible]        DO [illegible] I=1,K
[illegible]        [illegible]
[illegible]    [illegible]
[illegible]    [illegible] CONTINUE
           C
           C WRITE STATE SUPPORT INCREASE
           C
[illegible]        WRITE(6,[illegible]) [illegible](I),I=1,K)
[illegible]    [illegible] FORMAT('0',' [illegible] STATE SUPPORT INCREASE[illegible] = [illegible]',2X,
               1F12.2,4(5X,F12.2))
           C
           C READ STATE POLICY PAYMENT PERCENT INTO WORK1
           C
[illegible]        READ(5,[illegible]) (WORK1(I),I=1,K)
[illegible]    [illegible] FORMAT([illegible])
           C
           C PRINT POLICY PAYMENT PERCENT
           C
[illegible]        WRITE(6,[illegible]) (WORK1(I),I=1,K)
[illegible]    [illegible] FORMAT('0',' [illegible] STATE POLICY PAYMENT PERCENT',18X,F6.2,
               14(11X,F6.2))
           C
           C CALCULATE PAYMENT STATE SUPPORT EQUAL TO PAYMENT PCT TIMES
           C STATE SUPPORT INCREASE[illegible] IF [illegible] NOT ZERO
           C
[illegible]        DO [illegible] I=1,K
[illegible]        IF([illegible](I).[illegible]) GO TO [illegible]
[illegible]        [illegible](I)=[illegible](I)*(WORK1(I)/100.)
[illegible]    [illegible] CONTINUE
           C
           C [illegible] STATE SUPPORT [illegible]
           C
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FORTRAN IV G LEVEL  19            MAIN              DATE = 72063         11/13/46                PAGE [illegible]
[illegible]            WRITE(6,765)(SVALUE(I),I=1,6)
[illegible]        765 FORMAT(1H0,'  37.PAYABLE STATE SUPPORT INCREASE(ITEM12)',7X,
                  1F12.2,4(5X,F12.2))
                C
                C CALCULATE STATE AID PAYABLE
                C
[illegible]            DO 758 I=1,6
[illegible]            IF(SVALUE(I).GT.0.0) GO TO 757
[illegible]            SVALUE(I)=SVALUE(I)+[illegible]
[illegible]            GO TO 758
                C
                C
                C IF EQUALIZED VALUATIONS GT GUARANTEED VALUATIONS,
                C IT IS ASSUMED THAT STATE AID EQUALS TOTAL PRESENT AID([illegible])
                C
                C
[illegible]        757 SVALUE(I)=[illegible]
[illegible]        758 CONTINUE
[illegible]            WRITE(6,760) (SVALUE(I),I=1,6)
[illegible]        760 FORMAT(1H ,'  38.STATE AID PAYABLE',22X,F12.2,4(5X,F12.2))
[illegible]            WRITE(6,761)
[illegible]        761 FORMAT(1H ,'EQUALS ITEM 37 + ITEM 35 IF ITEM 5 IS POSITIVE')
[illegible]            WRITE(6,762)
[illegible]        762 FORMAT(1H ,'AND ITEM 37 IF ITEM 5 IS NOT POSITIVE')
                C
                C ADD STATE AID PAYABLE TO TOTAL STATE OF REVENUES.
                C
[illegible]            DO 777 I=1,6
[illegible]            [illegible]
[illegible]        777 CONTINUE
                C
                C TEST IF [illegible] IS BASE CASE
                C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
                C
[illegible]            CALL [illegible]
                C
                C WRITE STATE REVENUE REPORT HEADER LINES.
                C
[illegible]            WRITE(6,770)
[illegible]        770 FORMAT(1H1,47X,'TOTAL REVENUE, ALL STATE SOURCES')
[illegible]            WRITE(6,[illegible])([illegible](I),I=2,6)
[illegible]            WRITE(6,[illegible])
                C
                C WRITE STATE AID PAYABLE, [illegible], AID, AND [illegible] PUPIL AID.
                C
[illegible]            WRITE(6,[illegible])(SVALUE(I),I=1,6)
[illegible]        [illegible] FORMAT(1H ,'  STATE AID PAYABLE(EXCEPT REV-LIMIT)',7X,F12.2,
                  1[illegible])
[illegible]        [illegible] WRITE(6,[illegible])([illegible](I),I=1,6)
[illegible]        [illegible] FORMAT(1H ,'  [illegible]',10X,F12.2,4(5X,F12.2))
[illegible]            WRITE(6,[illegible])([illegible](I),I=1,6)
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 0527           517 FORMAT(1H0,'   ATYPICAL PUPIL AID',T46,F12.2,4(5X,F12.2))
                C
                C INITIALIZE COUNTER FOR CT AND CAT. STATE REVENUES
                C
 0528                 KOUNT(4)=0
 0529                 KOUNT(5)=0
                C
                C CLEAR RVALUE ARRAY.
                C
 0530               DO 808 I=1,K
 0531                 RVALUE(I)=0.0
 0532           808 CONTINUE
                C
                C READ STATE CT REVENUE ITEMS(CT=0). TSRVN(1,I) CONTAINS
                C SUM OF ALL STATE CT REVENUE ITEMS.
                C
 0533           809 READ(8,776)CT,(TITLE(I),I=1,5),(RVALUE(I),I=1,K)
 0534                 IF(CT.EQ.ALPHA(1)) GO TO 796
 0535                 IF(CT.EQ.ALPHA(2)) GO TO 807
 0536                 IF(CT.EQ.ALPHA(3)) GO TO 825
                C
                C COUNT AND PRINT STATE CT REVENUE ITEMS.
                C
 0537                 KOUNT(4)=KOUNT(4)+1
 0538                 WRITE(6,767)(TITLE(I),I=1,5),(RVALUE(I),I=1,K)
 0539                 GO TO 809
                C
                C COUNT AND PRINT STATE CATEGORICAL REVENUE ITEMS.
                C
 0540           807 IF(KOUNT(5).NE.0) GO TO 820
 0541                 WRITE(6,[illegible])
 0542           820 KOUNT(5)=KOUNT(5)+1
 0543                 WRITE(6,767)(TITLE(I),I=1,5),(RVALUE(I),I=1,K)
                C
                C KEEP RUNNING TOTAL OF CATEGORICAL
                C STATE REVENUE ITEMS FOR Y1 TO Y5.
                C
 0544                 DO 810 I=1,K
 0545                 TSRVN(2,I)=TSRVN(2,I) +RVALUE(I)
 0546           810 CONTINUE
 0547                 GO TO 809
 0548           796   IF (KOUNT (4).GT.0) GO TO 816
 0549                 WRITE (6,420) (TSRVN(1,I),I=1,K)
 0550                 GO TO 797
                C
                C [illegible] FOR Y1 TO Y5.
                C
 0551           816   WRITE (6,[illegible])(TSRVN(1,I),I=1,K)
 0552                 GO TO 797
 0553           797   IF (KOUNT(5).GT.0) GO TO 826
 0554                 WRITE (6,[illegible])
 0555                WRITE (6,412)
 0556                GO TO 852
               C
               C PRINT TOTAL CATEGORICAL STATE FUNDS FCS V1 TO V5.
               C
 0557            836 WRITE(6,430) (TSRVN(2,I),I=1,K)
               C
               C CALCULATE AND PRINT SUM OF STATE
               C CE AND CATEGORICAL REVENUES.
               C
 0558          852   DO 845 I=1,K
 0559                DO 840 J=1,2
 0560                TSRVN(3,I)=TSRVN(2,I)+TSRVN(1,I)
 0561            840 CONTINUE
 0562            845 CONTINUE
 0563                WRITE(6,850) (TSRVN(3,I),I=1,K)
 0564            850 FORMAT('0',' TOTAL REVENUE, ALL STATE SOURCES',12X,F12.2,
                    16(5X,F12.2))
               C
               C
               C TEST IF REVENUE FORECAST RUN IS BASE CASE
               C OR ALTERNATIVE CASE, AND PRINT APPROPRIATE TITLES
               C
               C
 0565                CALL TEST(1)
               C
               C
               C PRINT HEADER LINES FOR
               C TOTAL REVENUE REPORT
               C
               C
 0566                WRITE(6,888)
 0567            888 FORMAT(' ',48X,'TOTAL REVENUE')
 0568                WRITE(6,6)(RVTITLE(I),I=2,M)

 0569                WRITE(6,375)
               C
               C INITIALIZE TOTREV ARRAY. I=1 CE REVENUE.
               C I=2 CATEGORICAL REVENUES.
               C
 0570                DO 865 I=1,K
 0571                DO 860 J=1,2
 0572                TOTREV(J,I)=0.0
 0573            860 CONTINUE
 0574            865 CONTINUE
               C
               C CALCULATE CURRENT EXPENSE REVENUES,
               C TOTAL CATEGORICAL, AND TOTAL REVENUES
               C
 0575                DO 870 I=1,K
 0576                TOTREV(1,I)=REVENUE(1,I+1)+DLCRVN(I)+TSRVN(1,I)+TFRVN(1,I)
 0577                TOTREV(2,I)=TSRVN(2,I)+TFRVN(2,I)
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FORTRAN IV G LEVEL  19                MAIN               DATE = 72062        11/13/[illegible]          PAGE [illegible]
 0579              TOTREV(3,I)=TOTREV(1,I)+TOTREV(2,I)
 0580          370 CONTINUE
               C
               C PRINT EXPECTED CF, EXPECTED CATEGORICAL
               C AND EXPECTED TOTAL REVENUES.
               C
 0581              WRITE(6,373)(TOTREV(1,I),I=1,K)
 0582          373 FORMAT(' ','     TOTAL EXPECTED REVENUES',19X,F12.2,4(5X,F12.2))
 0583              WRITE(6,35)
 0584              WRITE(6,[illegible])
 0585          [illegible] FORMAT(' ',' NON-CURRENT EXPENSE SOURCES')
 0586              WRITE(6,373)(TOTREV(2,I),I=1,K)
 0587              WRITE(6,35)
 0588              WRITE(6,385)(TOTREV(3,I),I=1,K)
 0589          385 FORMAT(' ',' TOTAL EXPECTED REVENUE, ALL SOURCES',9X,F12.2,
                  1 4(5X,F12.2))
               C
               C INITIALIZE REVENUE FEASIBILITY  FIELD.
               C
 0590              IFOPT=0
 0591              READ(5,2[illegible]) IFOPT,SPLSCY
 0592           2[illegible] FORMAT(11X,I1,F12.2)
               C
               C
               C
               C REVENUE FEASIBILITY
               C
               C
               C REVENUE FEASIBILITY IS CALCULATED UNDER
               C OPTION 1, OPTION 2, OR OPTION 3, AS DETERMINED BY FEASIBILITY OPTION FLAG
               C   IFOPT. THE DEFAULT IS OPTION 1.
               C UNDER OPTION 1(IFOPT=1) THE PROGRAM
               C [illegible] ASSUMES THAT ONLY AN ACTUAL SURPLUS AND THE CF
               C [illegible] IS CARRIED FORWARD TO [illegible] OTHER ANNUAL
               C [illegible] AND [illegible], AND THE
               C TAX RATE IS PERMITTED TO FLUCTUATE ANNUALLY.
               C FOR OPTION 2(IFOPT=2), PROGRAM LOGIC ASSUMES THAT ANY SURPLUS IS CARRIED
               C FORWARD AND THAT THE REAL ESTATE TAX DOES NOT DECLINE.
               C FOR OPTION 3 (IFOPT=3), SURPLUS IS CARRIED AND THE TAX RATE FLUCTUATES.
               C
               C
               C
               C [illegible] CARRIED FORWARD FROM CY
 [illegible]           [illegible](2,I)=SPLSCY
               C
               C
               C CALCULATE YEAR 2 SURPLUS OR DEFICIT
               C [illegible] TAX RATES.
               C
               C
 [illegible]           DO 400 I=2,K
```

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              C OPTION 1  REVENUE FEASIBILITY CALCULATION
              C NO SURPLUS CASH CARRIED FORWARD TO Y1, AND TAX RATE FLUCTUATES.
              C
              C
 0012               DO 407 I=2,N
 0013               COLAMT(I)=(COLRCT(I)/100.)*ASMVL(I)
 0014               CTHREV(I)=[illegible](I-1)*[illegible](1,I-1)+[illegible](1,I-1)+DEFICT(2,I-1)
 0015               TOTREV(1,I-1)=TOTCST(1,I)-CTHREV(I)
 0016               RESTTX(I)=TOTREV(1,I-1)/COLAMT(I)
 0017               DEFICT(1,I)=OTHREV(I)+(RESTTX(I)*COLAMT(I))
 0018               DEFICT(2,I)=0.0
 0019           407 CONTINUE
 0020               WRITE(6,420)
 0021           420 FORMAT(1H1,'[illegible] FEASIBILITY OPTION 1')
 0022               GO TO [illegible]
              C
              C
              C OPTION 2  REVENUE FEASIBILITY CALCULATION
              C SURPLUS CARRIED FORWARD AND TAX RATE DOES NOT GO DOWN.
              C
              C
              C
              C
              C CALCULATE COLLECTED REVENUE PER MILL
              C
              C
 0023           499 DO 505 I=2,N
 0024               COLAMT(I)=(COLRCT(I)/100.)*ASMVL(I)
              C
              C CALCULATE Y1-Y0 SURPLUS OR DEFICIT IN
              C PREPARATION FOR COMPUTING CHG IN TAX RATE
              C
 0025               DEFICT(2,I)=TOTREV(1,I-1)-TOTCST(1,I)+DEFICT(2,I-1)
              C
              C SET Y1 TAX RATE EQUAL TO YEAR I-1 TAX RATE
              C
 0026               RESTTX(I)=RESTTX(I-1)
              C
              C
              C TEST FOR SURPLUS BEFORE CHANGING RATES.
              C
              C
 0027               IF(DEFICT(2,I).GE.0.0) GO TO [illegible]
              C
              C DEFICIT EXISTS,VARIABLE RATE IS TAX RATE WHICH
              C WILL PROVIDE SUFFICIENT R.E. TAX REVENUE TO COVER DEFICIT.
              C
              C
 0028               RATE=RESTTX(I)-(DEFICT(2,I)/COLAMT(I))
              C
              C
```

```
  0629                RESTTX(T)=RATE
               C
               C CALCULATE INCREASED REVENUE IN YEAR T
               C
  0630            930 RATINC(LAMPL(I))=(RESTTX(T)-RESTTX(I))
               C
               C CALCULATE SURPLUS AFTER CHANGING TAX RATE,IF LESS
               C THAN 100,ZERO SURPLUS OUT. SURPLUS IS CARRIED FORWARD.
               C
               C
  0631                DFICIT(2,T)=DFICIT(2,T)*RATE
  0632                IF(ABS(DFICIT(2,T)).LT.100.)DFICIT(2,T)=0.0
               C
               C CALCULATE TOTAL REVENUE
               C
  0633                DFICIT(1,T)=TOTREV(1,T-1)*RATE
  0634            935 CONTINUE
  0635                WRITE(6,933)
  0636            933 FORMAT('0','REVENUE FEASIBILITY OPTION 2')
  0637                GO TO 939
               C
               C
               C REVENUE FEASIBILITY OPTION 3(IFOPT=2).
               C SURPLUS CARRIED FORWARD AND TAX RATE FLUCTUATES.
               C
               C
  0638            936 DO 932 T=2,N
  0639                COLRML(T)=(COLPCT(T)/100.)*PVPPL(T)
  0640                OTHREV(T)=OLCRVN(T-1)+TFEVN(1,T-1)+TSEVN(1,T-1)+DFICIT(2,T-1)
  0641                TOTREV(1,T-1)=TOTCST(1,T)-OTHREV(T)
  0642                RESTTX(T)=TOTREV(1,T-1)/COLRML(T)
  0643                DFICIT(1,T)=OTHREV(T)+(RESTTX(T)*COLRML(T))
  0644            932 CONTINUE
  0645                WRITE(6,931)
  0646            931 FORMAT('0','REVENUE FEASIBILITY OPTION 3')
               C
               C
               C CALCULATE YEAR TO YEAR CHANGE IN TAX RATE
               C
               C
  0647            939 DO 937 T=2,N
  0648                TAXCHG(T)=RESTTX(T)-RESTTX(T-1)
  0649            937 CONTINUE
  0650                WRITE(6,35)
  0651                WRITE(6,940) (YTITLE(T),T=1,N)
  0652            940 FORMAT('0',35X,A4,11X,A4,13X,A4,15X,A4,2(13X,A4))
               C
               C
               C PRINT  TAX RATE AND YEAR TO YEAR CHANGE IN RATE.
               C
               C
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0653               WRITE(6,965)(RESTTX(I),I=1,M)
0654           965 FORMAT('0','  REAL ESTATE TAX RATE(MILLS)',5X,F6.2,9X,F6.2,
              111X,F6.2,13X,F6.2,2(11X,F6.2))
0655               WRITE(6,950)(TAXCHG(I),I=2,M)
0656           950 FORMAT(' ',' YEAR TO YEAR CHANGE',26X,F6.2,11X,F6.2,13X,F6.2,
              12(11X,F6.2))
0657               WRITE(6,953)(YTITLE(I),I=2,M)
0658           953 FORMAT('0',52X,A4,4(13X,A4))
            C
            C
            C PRINT REVENUES AFTER CHANGE IN TAX RATE, AND COST DATA.
            C
            C
0659               WRITE(6,955)(DFICIT(1,I),I=2,M)
0660           955 FORMAT('0','  TOTAL REVENUE AT Y1-Y5 TAX RATES',11X,F12.2,
              14(5X,F12.2))
0661               WRITE(6,956) (DFICIT(2,I),I=1,K)
0662           956 FORMAT(' ','  SURPLUS FROM PRIOR YEAR',22X,F12.2,4(5X,F12.2))
0663               WRITE(6,958) (TOTCST(1,I),I=2,M)
0664           958 FORMAT('0','  TOTAL COST',33X,F12.2,4(5X,F12.2))
0665               WRITE(6,960) (DFICIT(2,I),I=2,M)
0666           960 FORMAT('0','  SURPLUS AT Y1-Y5 TAX RATES',17X,F12.2,4(5X,F12.2))
0667               WRITE(6,35)
0668               WRITE(6,968)
0669           968 FORMAT('0',57X,'SUBSIDIARY DATA')
0670               WRITE(6,35)
0671               WRITE(6,40)(YTITLE(I),I=2,M)
            C
            C
            C PRINT REVENUE PER MILL, AND COLLECTED REVENUE PER MILL.
            C
            C
0672               WRITE(6,967)(RVPMIL(I),I=2,M)
0673           967 FORMAT('0','  REVENUE PER MILL',27X,F12.2,4(5X,F12.2))
0674               WRITE(6,970)(COLPCT(I),I=2,M)
0675           970 FORMAT('0','  COLLECTION PERCENT',25X,F12.2,4(5X,F12.2))
0676               WRITE(6,972) (COLRML(I),I=2,M)
0677           972 FORMAT('0','  COLLECTED REVENUE PER MILL',17X,F12.2,4(5X,F12.2))
            C
            C
            C CATEGORICAL REVENUE FEASIBILITY
            C
            C
0678           985 CALL [illegible](6)
0679               WRITE(6,35)
0680               WRITE(6,40) (YTITLE(I),I=2,M)
0681               WRITE(6,[illegible])([illegible](2,I),I=2,M)
0682           [illegible] FORMAT(' ','  TOTAL CATEGORICAL COSTS',[illegible]X,F12.2,4(5X,F12.2))
0683               WRITE(6,[illegible])([illegible](2,I),I=1,M)
0684           [illegible] FORMAT('0','  TOTAL EXPECTED CATEGORICAL REVENUES',8X,F12.2,
              14(5X,F12.2))
```

```
[illegible]            DO 603 I=3,4
[illegible]            [illegible]
[illegible]            [illegible]
[illegible]        603 CONTINUE
[illegible]            WRITE(6,[illegible]) [illegible]
[illegible]        [illegible] FORMAT([illegible]  SURPLUS(+), DEFICIT(-)',21X,F12.2,4(5X,F12.2))
                 C
                 C
                 C CALCULATE R.E. TAX REVENUES AT 71-75 RATES.
                 C
                 C
[illegible]            DO [illegible] I=2,4
[illegible]            [illegible]
[illegible]       [illegible] CONTINUE
                 C
                 C
                 C PRINT SUMMARY REPORT OF 71-75 REVENUES BY SOURCE AND
                 C AS A PERCENT OF TOTAL PROGRAM COSTS.
                 C
                 C
[illegible]            CALL [illegible]
[illegible]            WRITE(6,[illegible])
[illegible]       [illegible] FORMAT([illegible] SUMMARY OF 71-75 EXPECTED CURRENT EXPENSE REVENUE
                      1BY FUNDING SOURCE')
[illegible]            WRITE(6,[illegible])
[illegible]       [illegible] FORMAT([illegible] AS A PERCENTAGE OF ANNUAL OPERATING EXPENSES')
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible])
[illegible]            WRITE(6,[illegible])
[illegible]       [illegible] FORMAT([illegible] CURRENT EXPENSE REVENUES')
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible]  R.E. TAX REVENUES(AT 71-75 RATES)',11X,F17.2,4F17.2)

[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible]  OTHER LOCAL REVENUES',21X,F17.2,4F17.2)
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible]  STATE AID',32X,F17.2,4F17.2)
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible]  FEDERAL AID',30X,F12.2,4F17.2)
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible]  TOTAL CURRENT EXPENSE REVENUES',11X,F17.2,4F17.2)
[illegible]            WRITE(6,[illegible])
[illegible]            [illegible]
[illegible]       [illegible] FORMAT([illegible] TOTAL [illegible],F17.2,4F17.2)
[illegible]            WRITE(6,[illegible])
[illegible]            WRITE(6,[illegible])
[illegible]            WRITE(6,[illegible])
[illegible]       [illegible] FORMAT([illegible] REVENUES AS A PERCENT OF OPERATING COSTS')
[illegible]            WRITE(6,[illegible])
                 C
                 C
                 C [illegible]
```

```
      [illegible]
      [illegible]
[illegible] CONTINUE
      [illegible]
      [illegible]
      [illegible]
[illegible] CONTINUE
      [illegible]
      [illegible]
      [illegible]
[illegible] CONTINUE
      [illegible]
      [illegible]
      [illegible]
[illegible] CONTINUE
      [illegible]
      STOP
      END
```

```
FORTRAN IV G LEVEL  21            RPST            DATE = 77[illegible]        11/17/76          PAGE 0001

0001                 SUBROUTINE [illegible]
               C
               C WRITE [illegible] TO [illegible] OF REVENUE FORECAST RUN BY
               C [illegible] CASTR[illegible], IN ALTERNATIVE CASTR(*). CALLS SUBROUTINE
               C [illegible]TITLE[illegible] TO PRINT CORRESPONDING REPORT TITLE.
               C
0002                 COMMON [illegible],[illegible]TITLE[illegible],[illegible],IREPRT,[illegible],IPSF,[illegible],[illegible]FLAG
0003                 IF([illegible]) GO TO 1
0004                 CALL [illegible]TITLE[illegible]
0005                 GO TO 2
0006               1 CALL [illegible]TITLE[illegible]
0007               2 RETURN
0008                 END
```

```
FORTRAN IV G LEVEL  21        [illegible]        DATE = [illegible]        [illegible]        PAGE [illegible]

0001                 SUBROUTINE [illegible]
               C
               C PRINTS A GRAPHIC TITLE CONSISTING OF TWO LINES.
               C THE 1ST LINE CONTAINS THE DISTRICT NAME AND CASE TITLE.
               C LINE 2 [illegible] AND PAGE NUMBER.
               C
               C
0002                 COMMON [illegible]
0003                 [illegible]
0004                 [illegible]
0005                 [illegible]
0006                 [illegible]
0007               [illegible]
0008                 [illegible]
0009               [illegible]
0010              [illegible]
0011              [illegible]
0012              [illegible]
                    [illegible]
0013                 RETURN
0014                 END
```

VARIABLE DICTIONARY

for the

REVENUE SIMULATION COMPUTER
PROGRAM OF THE REVENUE MODULE

ALPHA(I)	Variable used to store the values that the variable CT can take on. Subscript I ranges over the four values which CT can have. I=1 is "B", I=2 is "C", I=3 is "N", and I=4 is "R".
ASSPCT(I)	Assessment ratio in the real estate tax forecast. Subscript T ranges over years.
COLPCT(T)	Collection percent, used to reduce real estate tax revenue because of inability to collect all taxes levied. Subscript T ranges over years.
CT	Temporary variable, in which is stored a character which indicates the funding source of the revenue item being read. The value and meaning of each "card type" are as follows: CT= B indicates the end of the categorical revenue card deck or last current expense revenue item has been read. CT= C indicates that a categorical revenue item is being read. CT= R indicates that a current expense revenue item is being read. CT= N indicates that the last categorical revenue item has been read.
CTITLE(I,J)	Case titles for Base Case and alternative case (see Table VI-2). Subscript I ranges over the cases. Subscript J ranges over locations necessary to store the characters of each case title.
DFICIT(I,T)	Surplus (+), Deficit (-). Subscript I=1 represents before changing tax rates. I=2 represents after changing tax rates. Subscript T ranges over years.

DTITLE(I)	School district name. Subscript I ranges over the locations necessary to store the characters.
E	Index used to denote an enrollment classification. E=1 is the first enrollment classification type (corresponding to the classification name identifier stored in ETITLE (I,J), E=2 is the second, and so on.
EQTAX(T)	Y1-Y5 Equalized Tax Rate (percentage) used in Incentive Equalization Aid calculation. Subscript T ranges over years.
ETITLE(I,J)	Enrollment titles. Subscript I ranges over the enrollment classifications, as defined in the Incentive-Equalization Aid Formula, which exist in the school district (enough space is allocated to store the maximum number as defined in SENATE No. 575). Subscript J ranges over locations necessary to store the characters of each title.
FORMLA(T)	Temporary variable used as work area to both save data and perform various calculations relative to Formula Aid Calculation. Subscript T ranges over years. T=1 is Y1, T=2 is Y2, etc. (1) Calculate and store Y1-Y5 foundation program amounts. (2) Calculate and store Y1-Y5 minimum aid as computed in Formula Aid computation. (3) Store higher of Equalized Aid or Minimum Aid for Y1-Y5.

GVAL(I,T)	Variable used to calculate and store several items used in the Incentive Equalization Aid formula. Subscript I=1 is Guaranteed Valuation (weighted resident enrollment X Guaranteed valuation - per weighted pupil) Subscript I=2 represents the difference between Guaranteed Valuation and the Market Value of Real Property (Equalized Valuation) when positive, or is zero when negative or zero. Subscript T ranges over years. (1) If positive, used to calculate and store Incentive-Equalization Support as the product of the equalized tax rate and the excess of Guaranteed Valuation over Equalized Valuation.
N	Total number of years in the FYP plus the current year.
IEFLAG	Flag to indicate if Incentive-Equalization Aid is to be calculated. IEFLAG=0 if Incentive-Equalization Aid is to be computed, and is 1 when only Formula Aid (Present Aid) is to be calculated.
IEMIN(T)	Incentive-Equalization Minimum Support Aid. Subscript T ranges over years.
IFØPT	Revenue feasibility input option flag. IFØPT=1, revenue feasibility calculated assuming only CY actual surplus carried forward to Y1 and real estate tax rate (for school purposes) fluctuates (increases or decreases). IFØPT=2, revenue feasibility calculated assuming CY-Y4 surpluses carried forward and tax rate does not fall. IFØPT=3, revenue feasibility calculated assuming CY-Y4 surpluses carried forward, and tax rate fluctuates.
IPUPIL(E,T)	Enrollment forecast stored as integers. Subscript E ranges over enrollment types. Subscript T ranges over years.

IPGE	Page number.
IREPNO	Report number.
K	Total number of years in the planning period, e.g. 5.
KØUNT(I)	Card counter for number of revenue items by funding source. Subscript I ranges over type of revenue source. I=1 is local revenue sources, other than from real estate tax. I=2 is federal current expense funding source. I=3 is federal categorical funding source. I=4 is state current expense funding source. I=5 is state categorical funding source.
M	Temporary index. M=1 represents BC.M=2 alternative case.
MM	Temporary index representing which case title is to be printed.
MVRPRP(T)	Market value of real property for real estate tax purposes. Subscript T ranges over years.
NAFLAG	Indicates if run is base case or alternative case. Equals 0 if base case, or 1, if an alternative case.
NALTC	Indicates identification number of the alternative case for which the revenue forecaster is being run.
NECL	Number of enrollment classifications types in the district as defined in the Incentive Equalization Aid Formula.
NF	Number of consecutive years for which revenues are forecast.
NS	Indicates if alternative case contains a current expense transportation project. NS=0 when revenue forecast run is base case or alternative case without current expense special education project. NS=1 when alternative case contains a current expense special education project.
NT	Indicates if alternative case contains a current expense transportation project. NT=0 when revenue forecast run is base case or alternative case without current expense transportation program project.

	NT=1 when alternative case contains a current expense transportation project.
OLCRVN(I)	Expected revenues from local sources available to the school district, except the real estate tax. Subscript T ranges over years.
OTHREV(T)	Total expected current expense revenues from federal, state, and local sources (except real estate tax revenues) used in revenue feasibility calculation. Subscript T range over years.
P0LCYR(I,T)	Policy rates set by state or local administrators relative to the Incentive Equalization Aid calculation. Subscript T ranges over years. Subscript I=1, is the guaranteed valuation per weighted pupil based upon the classification assumption. Subscript I=2 is the policy rate for Minimum Support Aid calculated for Incentive-Equalization Aid.
PROJNM(I,J)	Variable used to store tha name identifier of a project in an alternative case. I ranges over the number of projects in the alternative case, and J ranges over the locations required to store the characters in the identifier.
PUPILS(E,T)	Weighted enrollment forecast. Subscript E ranges over enrollment types (Bateman enrollment classifications applicable in the district). E=number of enrollment types +1. Subscript T ranges over years. T=1 is CY enrollment, T=2 is Y1, T=3 is Y3, etc.
PUPWGT(I)	Pupil weights. Subscript I ranges over the enrollment classifications for the district and correspond to the enrollment titles entered in ETITLE (I,J).
RATE	Temporary variable used to calculate tax rate which would provide sufficient revenue to cover any deficits.

RESTTX(T)	Real estate tax rate in mills. Subscript T ranges over years.
RUNDT	Indicates date job was run.
REVALUE(T)	Temporary variable used to calculate and/or store expected revenues from various sources. (1) Store Y1-Y5 expected revenues from a particular revenue source being read (Federal or state, current expense or categorical) (2) Store Y1-Y5 current expense operating budget (3) Calculate and store Y1-Y5 net operating budget (4) Calculate and store Y1-Y5 total State Support Increase (total state support under Incentive-Equalization Aid - Total Present Aid) (5) Calculate and store Y1-Y5 proportion of Total State Support Increase Payable (6) Calculate and store Y1-Y5 (Incentive-Equalization) State aid payable (Equal to State Support Increase Payable plus Total Present Aid if Guaranteed Valuation exceeds Equalized Valuation, or Minimum Support Aid plus Total Present Aid if Guaranteed Valuation does not exceed Equalized Valuation).
RVENUE(I,T)	Total real estate tax revenue (after collections). Subscript I=1 represents BC. I=2 represents FYP. Subscript T ranges over years.
RVPMLL(T)	Revenue/mill (before collection). Subscript T ranges over years.
SPEC(T)	Base Case Special Education program costs. Subscript T ranges over years.
SPEDPC(T)	Atypical Pupil Aid revenues. Subscript T ranges over years.
SPLSCY	Surplus to be carried over from the CY to Y1.

T	Temporary index used for time in years. T=1 is CY, T=2 is Y1, T=3 is Y2, T=4 is Y3, T=5 is Y4, and T=6 is Y5. Note: In case of Atypical Pupil Aid T=1 is CY-1, T=2 is CY, etc.
TAXCHG(T)	Year to year change in tax rate. Subscript T ranges over years.
TEMP(T)	Temporary variable used for storing data, performing various calculations, etc. Subscript T ranges over years.
TEMP1(T)	Temporary Variable used to store data, perform various calculations. Subscript T varies over years. (1) Read and store added current expense transportation costs for an alternative case.
TFRVN(I,T)	Expected revenues, federal sources. Subscript I ranges over type of federal revenue source, i.e. I=1 is current expense federal source, I=2 is categorical federal revenue source, and I=3 represents total federal revenues (current expense plus categorical funding sources). Subscript T ranges over years. T=1 is Y1, T=2 is Y2, etc.
TITLE(I)	Temporary variable used to store the name identifier of a revenue item. Subscript I ranges over the locations necessary to store the characters of each identifier.
TØTCST(I,T)	Total cost over all programs and cost categories. I=1 represents total current expense costs, and I=2 represents total categorical costs, and I=3 is the sum of current expense and categorical cost.

TOTPA(T)	Total Present Aid (Equal to the higher of Minimum Aid or Equalized Aid plus CH. 301, L.1968 Aid). Subscript T ranges over years. T=1 is Y1, T=2 is Y2, etc.
TOTREV(I,T)	Total expected revenues by type of funding source. Subscript I ranges over type of funding source. I=1 is total revenue from all current expense sources. I=2 is total revenue from all categorical sources. I=3 is total revenue from all sources. Subscript T ranges over years.
TRNPC(T)	Transportation Program costs. Subscript T ranges over years.
TSRVN(I,T)	Expected revenue from State sources. Subscript I ranges over type of state funding source. I=1 is current expense sources, I=2 is categorical sources, and I=3 is the sum of current expense and categorical sources.
TXLEVD(T)	Real estate taxes levied. Subscript T ranges over years.
TXVALU(T)	Taxable valuation of real property. Subscript T ranges over years.
WRPCT(T)	Temporary variable used as a work area to both save data and to perform various calculations. Subscript T ranges over years. (1) Read and store Transportation Program reimbursement percentage. T=1 is CY, T=2 is Y1, etc. (2) Read in and store special education reimbursement percentage. T=1 is CY-1, T=2 is CY, T=3 is Y1, etc. (3) Read in and store State foundation program rate per pupil for Formula Aid T=1 is CY rate, etc. (4) Read in and store millage rate for Formula Aid Calculation. T=1 is CY rate, etc.

	(5) Read and store minimum aid rate per pupil. T=1 is CY rate, etc. (6) Read and store policy rate per pupil for CH. 301, L. 1968 aid.
WORK1(T)	Temporary variable used as a work area to perform various calculations. Subscript T ranges over years. T=1 is Y1, T=2 is Y2, etc. (1) Calculate local fair share for Y1-Y5 local fair share= market value of real property X millage rate. (2) Calculate Y1-Y5 equalized aid in Formula Aid computation Equalized Aid= Foundation Program - Local fair share. (3) Calculate Y1-Y5 CH.301, L. 1968 Aid. (4) Calculate Y1-Y5 Total revenue, all local sources as the sum of Y1-Y5 total other revenue sources and Y1-Y5 Real Estate Tax Revenue. (5) Calculate Y1-Y5 Total Expected Current Expense Revenues from Federal, State, and Local sources (excluding Real Estate Tax) (6) Calculate and store Y1-Y5 Total State Support (Incentive-Equalization Support and Minimum State Support Aid) (7) Store Y1-Y5 State Policy Payment Percent for Incentive-Equalization Aid.
YTITLE(I)	Year titles. Subscript I ranges over years.

REVENUE SIMULATOR COMPUTER PROGRAM

OUTPUT REPORTS

The sample output reports shown and discussed in this section are based upon sample data appropriate to the Trenton School District. These reports are generated for both a base case run or an alternative case run, with the exception of the following:

(1) The Alternative Case Title Page is printed only for an alternative case run;

(2) The Transportation Aid Forecast Report is printed for an alternative case run only if the alternative case includes a current expense transportation project;

(3) The Atypical Pupil aid Forecast Report is printed for an alternative case run only if the alternative case includes a current expense special education project.

Naturally, the reports generated for a base case or alternative case reflect the particular costs and revenues associated with these cases, i.e. data cards which are used to input costs and revenue will be added, adjusted, etc., for an alternative case, as necessary. Thus, the revenue forecast reports of State, Federal, and Local Sources will include any additional revenues anticipated as a result of the alternative case.

The reports shown in this section are intended for illustrative purposes only.

Page 1

BASE CASE REAL ESTATE TAX REVENUE FORECAST

Y1-Y5 district real property market value and Y1-Y5 assessment ratio are input. Taxable assessed value is the product of district real property market value times the assessment ratio. Revenue per mill is the taxable assessed value devided by 1000. The CY real estate tax and Y1-Y5 collection percent are input. Taxes levied is the product of revenue per mill and the real estate tax. Total real estate tax at current year rate is computed by multiplying the taxes levied times the collection percent.

[illegible]

[illegible]

PREPARED BY
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]

Page 1A ALTERNATIVE CASE TITLE PAGE

The Alternative Case number and the project titles in the Alternative Case are input. The Alternative Case Title Page is then printed to provide the user a ready reference of projects in the Alternative Case.

BASE CASE TRANSPORTATION AID FORECAST

The transportation aid reimbursement percent and transportation costs for CY and Y1-Y5 are input. Expected Transportation Aid is the product of total transportation costs and the reimbursement percent.

If the computer run is for an alternative case, the Transportation Aid Forecast Report is printed only if the Alternative case included a current expense transportation project. Otherwise, the Base Case Transportation Aid Forecast is still applicable.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] 2 [illegible] [illegible] [illegible]
[illegible] 2

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Page 2A ALTERNATIVE CASE TRANSPORTATION AID FORECAST

Base case transportation costs for the CY and Y1-Y5 are input, as are the Y1-Y5 transportation aid reimbursement percent. Y1-Y5 alternative case transportation costs are input.

Y1-Y5 Total Transportation Costs is the sum of Y1-Y5 base case transportation costs plus Y1-Y5 alternative case transportation costs.

Y1-Y5 Expected Transportation Aid is the product of Y1-Y5 Total Transportation Costs times Y1-Y5 Reimbursement Percent.

This report is printed only if there is a current expense transportation project in the alternative case run.

```
                         TRENTON SCHOOL DISTRICT      BASE CASE                     REPORT NO. [illegible]
                           REVENUE FORECAST           RUN DATE:[illegible], 1971    PAGE  2
                          TRANSPORTATION AID

                             CY            Y1            Y2            Y3            Y4            Y5
TOTAL TRANSPORTATION COSTS   27?433.?0     31?14?.??     323156.??     327636.??     [illegible]   [illegible]
REIMBURSEMENT PERCENTAGE                   75.??         7?.??         7?.??         7?.??         7?.??
EXPECTED TRANSPORTATION AID *              2?2?2?.75     2?2?3?.??     [illegible]   [illegible]   [illegible]
*EXPECTED REVENUE BASED UPON ONE YEAR
LAG FOR REIMBURSEMENT OF EXPENSES
```

Total Special Education Program costs for the Cy-1, CY, and Y1-Y5 are input, as are the Y1-Y5 reimbursement percents. Expected Atypical Pupil Aid is the product of Total Special Education Program costs times the Reimbursement Percent for Special Education.

If the computer run is for an alternative case, the Atypical Pupil Aid Forecast Report is printed only if the Alternative case included a current expense Special Education project. Otherwise, the Base Case Atypical Pupil Aid Forecast is applicable.

Page 18 ALTERNATIVE CASE ATYPICAL PUPIL AID FORECAST

Base case special education program costs for the CY-1, CY, and Y1-Y5, are input as are the Y1-Y5 special education reimbursement percents. Y1-Y5 alternative case special education costs are input.

Y1-Y5 Total Special Education Program Costs equal Y1-Y5 base case special education costs plus Y1-Y5 alternative case special education costs.

Y1-Y5 Expected Atypical Pupil Aid is the product of CY-1 to Y4 Total Special Education Program Costs times the Y1-Y5 reimbursement percent.

This report is printed only if there is a current expense special education project in the alternative case.

PRESENT SCHOOL DISTRICT
REVENUE FORECAST
ATYPICAL PUPIL AID

ALTERNATIVE CASE NUMBER 1 [illegible]
RUN DATE [illegible] PAGE 2

	Y1	Y2	Y3	Y4	Y5
TOTAL SPECIAL EDUCATION PROGRAM COSTS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REIMBURSEMENT PERCENTAGE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EXPECTED ATYPICAL PUPIL AID**	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

**EXPECTED ATYPICAL PUPIL AID IN Y1-Y5
CORRESPONDS TO PROGRAM COSTS IN [illegible]

Page 6 FORMULA AID CALCULATION-STATE SUBSIDY FORECAST

Y1-Y5 Resident Enrollment and Y1-Y5 Foundation Rate per resident pupil are input. Y1-Y5 Foundation Program is the product of Resident Enrollment times the Foundation Rate. Equalized or market value of property for State Aid calculations is the sum of district real property market value (see Real Estate Tax Revenue Forecast) plus market value of Class II Railroad Property. The Y1-Y5 millage rate is input. The Local Fair Share is the product of the Equalized Value of Property and the Millage Rate. Equalized Aid is calculated as the difference between the Foundation Program and the Local Fair Share. The Policy Rate per Pupil for Minimum Aid is entered. The Minimum Aid is calculated as the product of Resident Enrollment times the Minimum Aid Rate. Formula Aid is determined as the higher of Equalized Aid or Minimum Aid. The Policy Rate per pupil for CH301 is input. CH301 aid is calculated as the product of Resident Enrollment times the CH301 Policy Rate. Total Present Aid is calculated as the sum of Formula Aid plus CH301 Aid.

Page 5 TOTAL REVENUE, ALL LOCAL SOURCES FORECAST

Total Real Estate Tax at CY Rates was previously calculated. A set of Y1-Y5 estimates of revenue items from local sources is input. Each line represents a single revenue item from a local source for which Y1-Y5 revenues have been estimated. The Total, Other Local Sources is calculated as the sum of the individual revenue items. Total Revenue, All Local Sources is calculated as the sum of Total Real Estate Tax and Total, Other Local Sources.

[illegible]

[illegible]

[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Page 6 BASE CASE FEDERAL REVENUE FORECAST

A set of Y1-Y5 estimates of current expense revenue items from federal sources is input. Each line specifies a particular current expense federal source for which revenues have been estimated. The Y1-Y5 Total Current Expense Funds is calculated as the sum of the Y1-Y5 revenue estimates over the individual current expense revenue items.

A set of Y1-Y5 estimates of categorical revenue items from federal sources is input. Each line specifies a particular categorical federal source for which revenues have been estimated. Total Categorical Funds is calculated as the sum of the Y1-Y5 revenue estimates over the individual categorical revenue items.

Total Revenue All Federal Sources is calculated as the sum of Y1-Y5 Total Current Expense Funds plus Y1-Y5 Total Categorical Funds.

[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Page 6A ALTERNATIVE CASE FEDERAL REVENUE FORECAST

A set of Y1-Y5 estimates of current expense and categorical expense revenue items are input, as in the Base Case Federal Revenue Forecast. However, this report includes estimates of expected revenues from federal sources that are associated with the particular alternative case. Notice that this report includes an additional revenue item, PROJECT BUILD, that is anticipated with Alternative Case 3 (see the title line for the alternative case title).

Y1-Y5 total revenues for current expense, categorical expense and all federal sources are calculated.

[illegible]
[illegible]
[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Page 7 ENROLLMENT DATA USED AS INPUT TO FORMULA AND INCENTIVE-EQUALIZATION CALCULATIONS

The Y1-Y5 Enrollment Forecast by Enrollment Type is input. The Y1-Y5 Total Enrollment and the Student Weights by Student Weight Category are input. The Y1-Y5 Weighted Enrollment by Enrollment Type is calculated as the product of Y1-Y5 Enrollment Forecast by Enrollment Type times the corresponding Student Weight by Student Weight Category. Y1-Y5 Total Weighted Enrollment is calculated as the sum of the individual Y1-Y5 Weighted Enrollments by Enrollment Type.

TRENTON SCHOOL DISTRICT BASE CASE REPORT NO. TSDREV-1006
REVENUE FORECAST RUN DATE: OCT.10, 1971 PAGE 7

ENROLLMENT DATA USED AS INPUT TO FORMULA AND INCENTIVE-EQUALIZATION CALCULATIONS

ENROLLMENT FORECAST BY ENROLLMENT TYPE BY YEAR

	Y1	Y2	Y3	Y4	Y5
ENROLLMENT TYPE					
KINDERGARTEN	1401	1440	1464	1448	[illegible]
GRADES 1 TO 6	8474	8930	9182	9337	[illegible]
GRADES 7 TO 9	3690	3889	3987	4046	[illegible]
GRADES 10 TO 12	1810	2530	2565	2588	2529
VOCATIONAL DAY	245	250	258	263	280
SHARED TIME A.V.T.S.	77	77	80	80	[illegible]
SPECIAL CLASSES	660	660	660	660	[illegible]
AFDC	200	225	250	275	300
TOTAL ENROLLMENT	16557	18001	18446	18697	18541

WEIGHTED ENROLLMENT BY ENROLLMENT TYPE BY YEAR

	Y1	Y2	Y3	Y4	Y5
KINDERGARTEN	1050.75	1080.00	1098.00	1086.00	1126.50
GRADES 1 TO 6	8474.00	8930.00	9182.00	9337.00	[illegible]
GRADES 7 TO 9	4612.50	4861.25	4983.75	5057.50	4957.50
GRADES 10 TO 12	2353.00	3289.00	3334.50	3364.40	3287.70
VOCATIONAL DAY	490.00	500.00	516.00	526.00	560.00
SHARED TIME A.V.T.S.	100.10	100.10	104.00	104.00	104.00
SPECIAL CLASSES	660.00	660.00	660.00	660.00	[illegible]
AFDC	150.00	168.75	187.50	206.25	225.00
TOTAL ENROLLMENT	17890.34	19589.09	20065.74	20341.14	[illegible]

The Y1-Y5 Total Weighted Enrollment was previously calculated. The Minimum Support Rate per Weighted Pupil based upon the district Classification assumption is input. Minimum Support is calculated as the product of Y1-Y5 Total Weighted Enrollment times the Minimum Support Rate Per Weighted Pupil. Y1-Y5 Local Funds (except real estate tax revenues) and Y1-Y5 Current Expense Revenue from Federal sources were previously entered (calculated). Y1-Y5 State Funds is calculated as the sum of Y1-Y5 Transportation Aid plus Y1-Y5 Atypical Pupil Aid plus Y1-Y5 Total of Estimated Current Expense Revenues from State sources (all of the latter three items were previously calculated or inputted). Total Expected Revenue (Current Expense Sources) is calculated as the sum of Minimum Support plus Local Funds plus Federal Funds plus State Funds.

The Y1-Y5 Current Expense Budget is input. The Net operating Budget is calculated as the difference between the Current Expense Budget and Total Expected Revenue (Current Expense Sources). The Y1-Y5 Total Weighted Resident Enrollment was previously calculated. The Y1-Y5 Guaranteed Valuation per Weighted Pupil based upon the district's Classification assumption is input. The Y1-Y5 Guaranteed Valuation is calculated as the product of the Y1-Y5 Total Weighted Resident Enrollment times the Y1-Y5 Guaranteed Valuation per Weighted Pupil. The District's Equalized Tax Rate (Percent) is calculated as the quotient resulting from the Y1-Y5 Net Operating Budget divided by the Y1-Y5 Guaranteed Valuation.

This report is not printed if the IBFLAG=1, i.e. only Present Aid is calculated.

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                       TRENTON SCHOOL DISTRICT      BASE CASE                    REPORT NO. TS-REV-1007
                         REVENUE FORECAST           RUN DATE:OCT.10, 1971        PAGE  8
               EQUALIZED SCHOOL TAX RATE - STATE INCENTIVE-EQUALIZATION AID

                                                Y1           Y2           Y3           Y4           Y5

  1. WEIGHTED ENROLLMENT                    17890.34     19589.09     20065.74     20241.14     20182.68

  2. POLICY RATE PER WEIGHTED PUPIL           110.00       110.00       110.00       110.00       110.00

  EXPECTED REVENUE(CURRENT EXPENSE SOURCES):

      MINIMUM SUPPORT(ITEM 1 X ITEM 2)     1967937.00   2154800.00   2207231.00   2226525.00   2220096.00
      LOCAL FUNDS(EXCEPT LOCAL TAX REVENUES) 118392.00    114500.00     99000.00     95000.00     85500.00
      FEDERAL FUNDS                          50000.00     50000.00     50000.00     45000.00     50000.00
      STATE FUNDS                           852091.75    989342.50   1051068.00   1135700.00   [illegible]

  3. TOTAL                                 2988420.00   3308642.00   3407299.00   3521231.00   [illegible]

  TAX RATE COMPUTATION:

  4. CURRENT EXPENSE BUDGET               15284680.00  16547009.00  18344576.00  18768733.00  [illegible]

  5. NET OPERATING BUDGET(ITEM4-ITEM3)    12296260.00  13238367.00  14937277.00  15247502.00  [illegible]

  6. GUARANTEED VALUATION                536710144.00 587672576.00 601072224.00 611234812.00  [illegible]

  7. DISTRICT'S EQUALIZED TAX RATE-PCT(5/6)     2.29         2.25         2.46         2.50         2.56
```

Y1-Y5 Guaranteed Valuation, the product of Y1-Y5 Total Weighted Enrollment times Y1-Y5 Guaranteed Valuation per Weighted Pupil, was calculated previously, as was Y1-Y5 Equalized Valuation. The Excess of Guaranteed Valuation over Equalized Valuation is calculated as the difference between Y1-Y5 Guaranteed Valuation and Y1-Y5 Equalized Valuation. The Y1-Y5 District Equalized Tax Rate was previously calculated. Y1-Y5 Incentive-Equalization Support is calculated as the product of the Y1-Y5 Excess of Guaranteed Valuation over Equalized Valuation times the Y1-Y5 District Equalized Tax Rate. Y1-Y5 Minimum State Support Aid was previously calculated.

The Y1-Y5 Total State Support was computed as the sum of Y1-Y5 Incentive-Equalization Support plus Y1-Y5 Minimum State Support Aid Y1-Y5 Total Present Aid was previously calculated. The Y1-Y5 State Support Increase is calculated as the difference between Y1-Y5 Total State Support and Y1-Y5 Total Present Aid. The Y1-Y5 State Policy Payment Percent is input. The proportion of the Y1-Y5 State Support Increase to be paid (Y1-Y5 Payable State Support Increase) is the product of Y1-Y5 State Support Increase times Y1-Y5 State Policy Payment Percent. The Y1-Y5 State Aid Payable is the sum of Y1-Y5 Total Present Aid plus Y1-Y5 Payable State Support Increase, if Y1-Y5 Guaranteed Valuation exceeds Y1-Y5 Equalized Valuation, or Y1-Y5 Total

Present Aid, if Y1-Y5 Equalized Valuation exceeds Y1-Y5 Guaranteed Valuation.

This report is not printed if the IBFLAG=1, i.e. only Present Aid is calculated.

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                              TRENTON SCHOOL DISTRICT        BASE CASE
                                 REVENUE FORECAST             RUN DATE:OCT.10, 1971          REPORT NO. TSREV-1008
                          STATE INCENTIVE-EQUALIZATION AID                                   PAGE  9

                                                   Y1             Y2             Y3             Y4             Y5
 1. WEIGHTED ENROLLMENT                         17890.34       19589.09       20065.74       20341.14       20182.69
 2. VALUATION/PUPIL ASSUMPTION                  30000.00       30000.00       30000.00       30000.00       30000.00
 3. GUARANTEED VALUATION(ITEM1 X ITEM2)     536710144.00   587672576.00   601072224.00   610234112.00   605480794.00
 4. EQUALIZED VALUATION                     367599104.00   359688704.00   360749056.00   351684224.00   [illegible]
 5. EXCESS OF GV OVER EV(ITEM3 - ITEM4)     169111040.00   227983872.00   241223168.00   248549888.00   242934016.00
 6. EQUALIZED TAX RATE                              2.29           2.25           2.45           2.50           2.55
 7. INCENTIVE-EQUALIZATION SUPPORT(6X5)       3874404.00     5135739.00     5945612.00     6210226.00   [illegible]
 8. MINIMUM STATE SUPPORT AID                 1067937.00     2154300.00     2207221.00     2237625.00   [illegible]
 9. TOTAL STATE SUPPORT(ITEM7 + ITEM8)        5342341.00     7290539.00     8152843.00     8447851.00     8406286.00
10.TOTAL PRESENT AID(REPORT REV1003)          3176935.00     3873694.00     4651686.00     4148542.00     4073146.00
11.STATE SUPPORT INCREASE(ITEM9 - ITEM10)     2665406.00     3416845.00     4101157.00   [illegible]   [illegible]
12.STATE POLICY PAYMENT PERCENT                    40.00          40.00          40.00          40.00          40.00
13.PAYABLE STATE SUPPORT INCREASE(11X12)      1066162.00     1366737.00     1640462.00     1719723.00     1743159.00
14.STATE AID PAYABLE*                         4243097.00     5240431.00     5692148.00     5868265.00     5806345.00
*EQUALS ITEM 10 + ITEM 13 IF ITEM 5 IS POSITIVE
OR ITEM 10 IF ITEM 5 IS NOT POSITIVE
```

BASE CASE STATE REVENUE FORECAST

A set of Y1-Y5 estimates of current expense revenue items from State sources is input. Each line identifies a particular State current expense source for which Y1-Y5 revenues have been estimated. The Y1-Y5 Total Current Expense Funds is calculated as the summation over all the current expense revenue items of the Y1-Y5 revenue estimates.

A set of Y1-Y5 estimates of categorical revenue items from State sources is input. Each line identifies a particular State categorical source for which Y1-Y5 revenues have been estimated. The Y1-Y5 Total Categorical Funds is calculated as the summation over all categorical revenue items of the Y1-Y5 categorical revenue estimates.

The Y1-Y5 Total Revenue for All State Sources is the sum of Y1-Y5 Total Current Expense Funds plus Y1-Y5 Total Categorical Funds.

TRENTON SCHOOL DISTRICT
REVENUE FORECAST
TOTAL REVENUE, ALL STATE SOURCES

BASE CASE
RUN DATE:OCT.10, 1971

REPORT NO. TSDREV-1009
PAGE 10

	Y1	Y2	Y3	Y4	Y5
CURRENT EXPENSE SOURCES					
STATE AID PAYABLE(REPORT REV-1009)	4243097.00	5240431.00	5692148.00	5968265.00	5804245.00
TRANSPORTATION AID	202924.75	239374.50	242365.50	245725.50	247747.75
ATYPICAL PUPIL AID	410330.00	511367.00	542092.00	618031.00	786712.00
FOREIGN BORN	5000.00	5000.00	5000.00	5000.00	5000.00
VOCATIONAL DAY SCH	50000.00	50000.00	50000.00	50000.00	50000.00
ADULT EDUCATION	12000.00	12000.00	12000.00	12000.00	12000.00
LAW ENFORCEMENT AID	84000.00	85000.00	85000.00	85000.00	85000.00
BUILDING AID	87937.00	86601.00	114611.00	120000.00	125000.00
TOTAL, CURRENT EXPENSE FUNDS	5095188.00	6229773.00	6743216.00	7004021.00	7127954.00
CATEGORICAL FUNDS					
OEO PROJECTS	5000.00	10000.00	15000.00	20000.00	20000.00
MODEL CITIES PROJS	15000.00	15000.00	20000.00	20000.00	20000.00
TOTAL CATEGORICAL FUNDS	20000.00	25000.00	35000.00	40000.00	40000.00
TOTAL REVENUE, ALL STATE SOURCES	5115188.00	6254773.00	6778216.00	7044021.00	7167954.00

Page 10A ALTERNATIVE CASE STATE REVENUE FORECAST

A set of Y1-Y5 estimates of current expense and categorical expense revenue items are input, as in the Base Case State Revenue Forecast. However, this report includes estimates of expected revenues from State sources that are associated with the particular alternative case. Notice that this report includes an additional revenue item, PROJECT BUILD, that is anticipated with Alternative Case 3 (see the title line for the alternative case title).

Y1-Y5 total revenues for current expense, categorical expense, and all State sources are calculated.

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                                   TRENTON SCHOOL DISTRICT      ALTERNATIVE CASE NUMBER  3  REPORT NO. TSDREV-1008
                                      REVENUE FORECAST          RUN DATE:OCT.10, 1971       PAGE  9
                                TOTAL REVENUE, ALL STATE SOURCES

                                             Y1            Y2            Y3            Y4            Y5
CURRENT EXPENSE SOURCES
  STATE AID PAYABLE(REPORT REV-1008)
                                      4244988.00    5242946.00    5694954.00    5870121.00    5808319.00
  TRANSPORTATION AID
                                       202824.75     239374.50     242365.50     245725.50     247797.75
  ATYPICAL PUPIL AID
                                       410330.00     511367.00     542092.00     625531.00     794812.00
  FOREIGN BORN
                                         5000.00       5000.00       5000.00       5000.00       5000.00
  VOCATIONAL DAY SCH
                                        50000.00      50000.00      50000.00      50000.00      50000.00
  ADULT EDUCATION
                                        12000.00      12000.00      12000.00      12000.00      12000.00
  LAW ENFORCEMENT AID
                                        84000.00      85000.00      85000.00      85000.00      85000.00
  BUILDING AID
                                        87937.00      86601.00     114611.00     120000.00     135000.00
TOTAL, CURRENT EXPENSE FUNDS
                                      5097079.00    6232288.00    6746022.00    7013377.00    7137928.00
CATEGORICAL FUNDS
  OEO PROJECTS
                                         5000.00      10000.00      15000.00      20000.00      20000.00
  MODEL CITIES PROJS
                                        15000.00      15000.00      20000.00      20000.00      20000.00
  PROJECT BUILD-GRANT
                                        50000.00      50000.00      50000.00      50000.00      50000.00
TOTAL CATEGORICAL FUNDS
                                        70000.00      75000.00      85000.00      90000.00      90000.00
TOTAL REVENUE, ALL STATE SOURCES
                                      5167079.00    6307288.00    6831022.00    7103377.00    7227928.00
```

TOTAL REVENUE FORECAST (SUMMARY)

The Y1-Y5 current expense revenue from local, Federal, and State sources were previously calculated. The Y1-Y5 Total Expected Revenue (Current Expense Sources) is the sum of Y1-Y5 Total Revenue, All Local Sources plus Y1-Y5 Total Current Expense Funds from Federal Sources plus Y1-Y5 Total Current Expense Funds from State Sources.

The Y1-Y5 categorical revenues from Federal and State sources were previously calculated. The Y1-Y5 Total Expected Revenues (Non-Current Expense Sources) is the sum of Y1-Y5 Total Categorical Funds from State Sources plus Y1-Y5 Total Categorical Funds from Federal Sources.

The Y1-Y5 Total Expected Revenues, All Sources, is calculated as the sum of the Y1-Y5 Total Expected Revenues from Current Expense Sources plus Y1-Y5 Total Expected Revenues from Non-Current Expense Sources.

TRENTON SCHOOL DISTRICT
REVENUE FORECAST
TOTAL REVENUE

BASE CASE
RUN DATE:OCT.19, 1971

REPORT NO. TSREV-1010
PAGE 11

	Y1	Y2	Y3	Y4	Y5
CURRENT EXPENSE SOURCES					
TOTAL EXPECTED REVENUES	14412717.00	15571088.00	16093499.00	16375896.00	16522193.00
NON-CURRENT EXPENSE SOURCES					
TOTAL EXPECTED REVENUES	1722178.00	2035368.00	2448458.00	2465000.00	2740000.00
TOTAL EXPECTED REVENUE, ALL SOURCES	16134895.00	17606448.00	18541952.00	18840896.00	19262193.00

The Y1-Y5 Total Revenue (Current Expense) at CY Real Estate Tax Rate was calculated previously. The Y1-Y5 Total Cost and the CY Actual Surplus (from prior year) are input. The Y1-Y5 Total Cost is subtracted from the Y1-Y5 Total Revenue at CY Real Estate Tax Rate to obtain the Surplus and Deficits at CY Tax Rate.

The CY Real Estate Tax Rate was input. The product of the Y1-Y5 Collection Percent times Y1-Y5 Revenue per Mill equals Y1-Y5 Collected Revenue per Mill. The Y1-Y5 Real Estate Tax Rate (in mills) necessary to cover any annual deficit is calculated. The Revenue Feasibility Option flag determines the method used to calculate the tax rate.

Under Option 1 (default option), the Y1-Y5 Real Estate Tax Rate equals Y1-Y5 Deficit divided by Y1-Y5 Collected Revenue per Mill. The Y1-Y5 Deficit equals Y1-Y5 Total Current Expense Costs minus the sum of Y1-Y5 Total Current Expense Revenues (excluding Real Estate Tax Revenues) plus actual CY Surplus. Any Y1-Y5 surpluses are not carried forward.

Under Option 2, the Y1-Y5 Real Estate Tax Rate equals the previous year's Real Estate Tax Rate, if there is no deficit, or the CY Real Estate Tax Rate plus the Y1-Y5 Deficit divided by the Y1-Y5 Collected Revenue Per Mill. The Y1-Y5 Real Estate Tax Rate always equals the CY Real Estate Tax Rate or greater, and Y1-Y5 Surpluses are added to succeeding year revenues.

Under Option 3, the Y1-Y5 Real Estate Tax Rate is calculated in the same way as under Option 1, however, Y1-Y5 Surpluses are added to succeeding year revenues when computing Y1-Y5 Total Current Expense Revenues.

Total Revenue at Y1-Y5 Real Estate Tax Rates is obtained by first calculating the product of the Y1-Y5 Real Estate Tax Rate times the Y1-Y5 Collected Revenues Per Mill and adding the result to Y1-Y5 Total Current Expense Revenues. Y1-Y5 Total Costs were input previously. Surplus at Y1-Y5 Tax Rates equals Y1-Y5 Total Cost minus Total Revenue at Y1-Y5 Tax Rates. If the absolute difference is less than 100, the Surplus at Y1-Y5 Tax Rates is set equal to zero.

Y1-Y5 Revenue Per Mill was calculated previously and the Y1-Y5 Collection Percent was input (see the Real Estate Tax Revenue Forecast Report).

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                                        TRENTON SCHOOL DISTRICT      BASE CASE                          REPORT NO. TS[illegible]V-1[illegible]11
                                         REVENUE FEASIBILITY         RUN DATE:OCT.1[illegible], 1971      PAGE 12

CURRENT EXPENSE REVENUE AND COSTS                    Y1              Y2              Y3              Y4              Y5
  TOTAL REVENUE AT CY REAL ESTATE TAX        14412717.00     15571088.00     16093499.00     [illegible]     [illegible]
  SURPLUS FROM PRIOR YEAR                            0.0             0.0             0.0             0.0             0.0
  TOTAL COST                                 15284680.00     16547009.00     18244576.00     [illegible]     [illegible]
  SURPLUS(+), DEFICIT(-) AT CY TAX RATE        -871963.00      -975921.00     -2151077.00     [illegible]     [illegible]
REVENUE FEASIBILITY OPTION 1


                                          CY         Y1              Y2              Y3              Y4              Y5
 REAL ESTATE TAX RATE(MILLS)            64.90      70.13           70.74           77.73           [illegible].14  [illegible].26
 YEAR TO YEAR CHANGE                                5.23            0.61            7.[illegible]   1.41            1.12
                                                     Y1              Y2              Y3              Y4              Y5
 TOTAL REVENUE AT Y1-Y5 TAX RATES            15284678.00     1654700[illegible].00     182445[illegible].00     [illegible]     [illegible]
 SURPLUS FROM PRIOR YEAR                            0.0             0.0             0.0             0.0             0.0
 TOTAL COST                                  15284680.00     16547009.00     18244576.00     [illegible]     [illegible]
 SURPLUS AT Y1-Y5 TAX RATES                         0.0             0.0             0.0             0.0             0.0

                                         SUBSIDIARY DATA

                                                     Y1              Y2              Y3              Y4              Y5
 REVENUE PER MILL                              181142.38       181690.38       182174.81       [illegible]     [illegible]
 COLLECTION PERCENT                               92.00           92.00           92.00           92.00           92.00
 COLLECTED REVENUE PER MILL                    166651.94       167155.13       1676[illegible].81       [illegible]12.50       [illegible].28
```

Page 13 REVENUE FEASIBILITY FOR NON-CURRENT EXPENSE PROGRAM

The Y1-Y5 Total Non-Current Expense (Categorical) Costs were previously input. The Y1-Y5 Total Non-Current Expense Revenues were calculated as shown in the Total Revenue Forecast Report.

The Y1-Y5 Surplus or Deficit is calculated by subtracting Y1-Y5 Total Non-Current Expense Costs from Y1-Y5 Total Expected Non-Current Expense Revenues.

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                                           TRENTON SCHOOL DISTRICT        BASE CASE                           REPORT NO. TS REV-1012
                                             REVENUE FEASIBILITY          RUN DATE:OCT.12, 1971               PAGE 1[illegible]

                                             Y1              Y2              Y3              Y4              Y5
TOTAL CATEGORICAL COSTS                1722178.00      2035368.00      2448458.00      244[illegible].00     274[illegible].00
TOTAL EXPECTED CATEGORICAL REVENUES    1722178.00      2035368.00      2448458.00      244[illegible].00     274[illegible].00
SURPLUS(+), DEFICIT(-)                       0.0             0.0             0.0             0.0             0.0
```

Page 14 SUMMARY OF Y1-Y5 EXPECTED CURRENT EXPENSE REVENUE BY FUNDING SOURCE AND AS PERCENTAGE OF ANNUAL OPERATING EXPENSES

Y1-Y5 Current Expense Revenues from the Real Estate Tax, Other Local Sources, State Sources, and Federal Sources were previously calculated or input. Y1-Y5 Total Current Expense Costs were previously input.

Y1-Y5 revenues by funding sources as a percentage of the annual operating budget for years Y1-Y5 equals Y1-Y5 revenues by source by year divided by Y1-Y5 Total Current Expense Costs by year.

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                              TRENTON SCHOOL DISTRICT       BASE CASE                       REPORT NO. TSCREV-[illegible]
                                 REVENUE FEASIBILITY         RUN DATE:OCT.10, 1971          PAGE 14
                       SUMMARY OF Y1-Y5 EXPECTED CURRENT EXPENSE REVENUE BY FUNDING SOURCE
                                AND AS A PERCENTAGE OF ANNUAL OPERATING EXPENSES

                                           Y1              Y2              Y3              Y4              Y5

 CURRENT EXPENSE REVENUES

   R.E. TAX REVENUES(Y1-Y5 RATES)     10021698.00     10152735.00     11352359.00     11416714.00     11831612.[illegible]

   OTHER LOCAL REVENUES                 119392.00       114500.00        95000.00        93000.00     [illegible]

   STATE AID                           5095188.00      6228773.00      6743216.00      7004021.00     [illegible]

   FEDERAL AID                           50000.00        50000.00        50000.00     [illegible]     [illegible]

   TOTAL CURRENT EXPENSE REVENUES     15284678.00     16547008.00     1824456[illegible].00  [illegible]  [illegible]


 TOTAL COSTS                          15284680.00     16547[illegible]9.00  18244576.00  [illegible]  [illegible]


 ANNUAL REVENUES AS A PERCENT OF OPERATING COSTS


   R.E. TAX REVENUES(Y1-Y5 RATES)          65.56           61.36           62.22           61.[illegible]   [illegible]

   OTHER LOCAL REVENUES                     0.77            0.69            0.54            0.52         [illegible]

   STATE AID                               33.34           37.65           36.96         [illegible]     [illegible]

   FEDERAL AID                              0.33            0.30            0.27            0.27         [illegible]
```

OVERALL ORDER OF CARD DECK FOR TAPS

Exhibit III.4-vii

```
************************************************************************
OVERALL ORDER OF REVSIM CARD DECK FOR BASE CASE RUN
************************************************************************



************************************************************************M
                  JOB CONTROL LANGUAGE(JCL)
************************************************************************M
// JOB etc.
// EXEC FORTGOG
//GO.SOURCE DD *

                  INSERT REVSIM PROGRAM DECK


/*

//GO.SYSIN DD *
************************************************************************M
                  SET OF BASE CASE INPUT CARDS
************************************************************************M

01[illegible]CT.10, 10716 9 5 0 0 0 0 5 0
02KINDERGARTEN
02GRADES 1 TO 6
02GRADES 7 TO 9
02GRADES 10 TO 12
02VOCATIONAL DAY
02SHARED TIME A.V.T.S.
02SPECIAL CLASSES
02[illegible]
02TOTAL ENROLLMENT
03BASE CASE
03ALTERNATIVE CASE NUMBER
03   REVENUE FORECAST
03   REVENUE FEASIBILITY
04CY  Y1  Y2  Y3  Y4  Y5
05TRENTON SCHOOL DISTRICT
06  .750 1.000 1.250 1.300 2.000 1.300 1.000  .750
0700MKTV364464850.356579600.357659400.358612000.359432800.362329010.
0800ASSR .508 .508 .503 .508 .508 .508
0900PRETX 54.90  0.0   0.0   0.0   0.0   0.0
1000COLL 92.00 92.00 92.00 92.00 92.00 92.00
1100TRAN  270433.  319166.  323154.  327634.  330397.  463597.
12TPP 75.00 75.00 75.00 75.00 75.00
1300SPED  820660. 1022734. 1084184. 1236062. 1573424. 1723563. 1873678.
14SPE 50.00 50.00 50.00 50.00 50.00
1500CLRPP  3134551.  3109301.  3090840.  3072380.  3053919.  3035459.
1601KIND     1401.   1440.   1464.   1448.   1494.
1602G1-6     8474.   8930.   9182.   9337.   9238.
1603G7-9     3490.   3989.   3987.   4046.   3990.
1604G10-12   1810.   2530.   2565.   2583.   2529.
1605VOCED     245.    252.    258.    263.    280.
```

```
1606AVTS      77.    77.    80.    80.    80.
1607SPCL     660.   660.   660.   660.   660.
1608AFDC     200.   225.   250.   275.   300.
1609TOTAL  16557. 1[illegible]1. 18446. 18697. 19541.
17ENR 400.00 400.00 400.00 400.00 400.00
18MILGP .01050 .01050 .01050 .01050 .01050
19XIN  75.00  75.00  75.00  75.00  75.00
20301  25.00  25.00  25.00  25.00  25.00
2100RTUITION-OTHER PAYMTS     65000.     70000.     70000.     75000.     80000.
2100RSURPLUS APPROPRIATED         0.         0.         0.         0.         0.
2100RINTEREST ON DEPOSITS      5392.      4500.      5000.      5000.      5000.
2100RREAL ESTATE SALES         5000.      5000.      1000.         0.         0.
2100REQUIPMENT SALES           1000.      2000.      1000.         0.         0.
2100RSALE OF SUPPLIES/MAT     10000.      6000.         0.         0.         0.
2100RRENTALS                  12000.     12000.     12000.     10000.     10000.
2100RMISCELLAEOUS RECEIPT     20000.     15000.     10000.      8000.      4000.
 21AB
2200RVOCATIONAL DAY AID       50000.     50000.     50000.     50000.     50000.
2200RP.L.874                      0.         0.         0.         0.         0.
2200ROTHER FEDERAL OE AID         0.         0.         0.         0.         0.
 22AB
2300CESEA TITLE I PROJS     1090178.   1210368.   1375658.   1375000.   1000000.
2300CESEA TITLE III          212000.    150000.    100300.     50000.         0.
2300CMDTA                    100000.    150000.    187500.    200000.    200000.
2300CMODEL CITIES            300000.    500000.    750000.    800000.   1500000.
 23AN
2400SCERVN    233037.    238601.    266511.    272000.    287000.
2500CERUC 13248781. 15294680. 16547009. 18244597. 19768776. 19108371.
2600CAHUD  1483560.   1722178.   2035368.   2448459.   2465000.   2740000.
27GVALU 30000.00 30000.00 30000.00 30000.00 30000.00
28TEMIN110.00110.00110.00110.00110.00
29PAYPCT 40.00 40.00 40.00 40.00 40.00
3000RFOREIGN CORP              5000.      5000.      5000.      5000.      5000.
3000RVOCATIONAL DAY SCH       50000.     50000.     50000.     50000.     50000.
3000RADULT EDUCATION          12000.     12000.     12000.     12000.     12000.
3000RLAW ENFORCEMENT AID      84000.     85000.     85000.     85000.     85000.
3000RBUILDING AID             87937.     86601.    114611.    120000.    135000.
 30AB
3100COEO PROJECTS              5000.     10000.     15000.     20000.     20000.
3100CMODEL CITIES PROJS       15000.     15000.     20000.     20000.     20000.
 31AN
3200FEASORTO        0.0

/*

//
```

III.5 PROJECT DESIGN PROCEDURES

Introduction

In STEP, a "project" is any deliberate effort to modify existing programs or policies to achieve a set of objectives. Developing project design procedures is the least technically complex problem, because designing projects is more art than science. Of course, the process could be more "scientific" if more were known about the science of instruction, if we knew "laws" that related what teachers or counselors do to what students subsequently accomplish. Despite this inherent limitation, however, it is incumbent upon the planners that whatever instructional science and engineering does exist - sparse as it may be - is incorporated into the design activity. The question is not art *versus* science, but rather art *and* science in the service of education.

Design Criteria

Project design procedures must serve the following requirements of the planning process:

(1) They must be established in such a way that there is broad participation in the development of project proposals.

(2) They must allow for innovative ideas, but also require thorough analysis and some study on the part of the authors.

(3) They must provide the relevant data about costs and

expected outcomes necessary for subsequent evaluation in the cost-utility decision phase.

(4) They must be developed and reviewed in a setting that is perceived as fair and unbiased, particularly by those groups which are skeptical of the policy-makers intentions.

(5) They must require only "reasonable" levels of effort of the writers and reviewers - especially since many proposals will not be approved for implementation.

Participation

Earlier it was indicated that the Policy Memo is a kind of advertisement, in which the district announces its interest in new proposals to achieve agreed upon ends. The first design question is: How shall that announcement be disseminated?

Effective dissemination of any information requires an analysis of the intended audience, the development of materials for communication with that audience and the selection of an appropriate medium of communication. To document its "fairness" in disseminating the policy announcement, the Board should maintain a record of each of its dissemination activities, something along the lines shown in Chart III.5-1.

Chart III.5-1

Dissemination Log (Sample)

Document: Policy Memo

Individual Recipients:

____

____

____

Group Recipients:

____

____

____

General Dissemination Media:

____

____

____

Feedback Evidence:

____

____

____

Included in the announcement should be brief guidelines to be followed by all persons who wish to submit a proposal. Detailed explanation of the project design requirements can be presented at a "bidder's conference" - an open meeting at which any potential author is invited to attend.

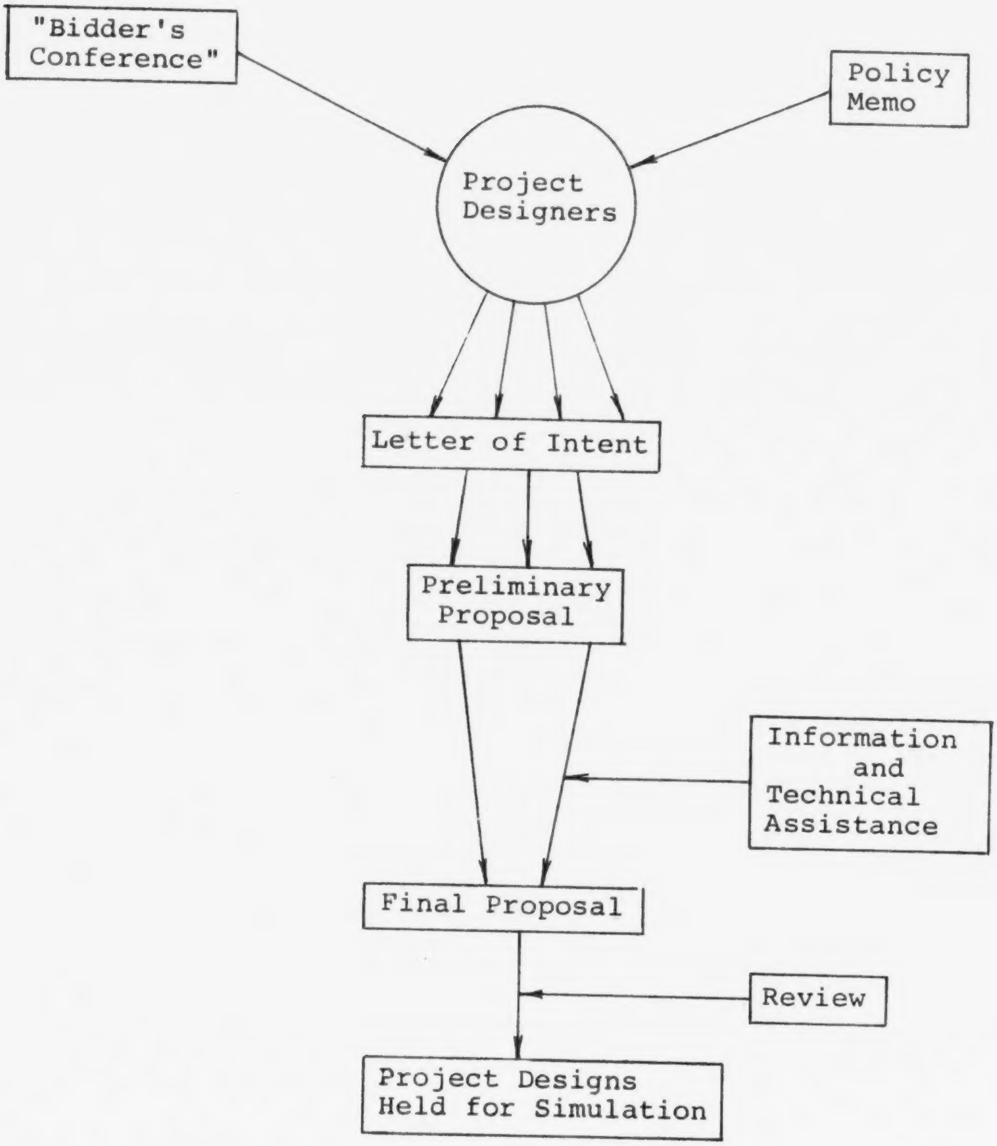
The Board is in a difficult situation in setting limits and requirements on project designers. On the one hand, they want any interested person to have an opportunity to contribute, but, at the same time, if hundred of proposals are submitted, the review process will become unworkable. Thus, to control the process somewhat, we propose the following "filter" system, shown in Chart III.5-2.

First, the Board may require a letter of intent, by a given date, for all potential authors; project design manuals will be disseminated only to those whose letters are received on time.

Second, there should be a "preliminary" proposal, submitted by a given date - a one-page summary of the project idea. The Board may allow all persons who achieve this objective to continue with the project design, or it may reject certain proposals at the preliminary stage... provided it can give a fair, public reason for the rejection. At this stage, the Board may also exercise its influence by awarding small "planning grants" to aid designers, or by suggesting to different authors with similar ideas that they form collaborative terms.

Chart III.5-2

Project Design Filter System


"Bidder's Conference"
Policy Memo
Project Designers
Letter of Intent
Preliminary Proposal
Information and Technical Assistance
Final Proposal
Review
Project Designs Held for Simulation

Third, during the final project design phase, the district must make available to designers materials and assistance. Designers from outside the educational staff - and, perhaps, some within the staff - may be ignorant of important facts about the districts, like salary schedules, legal requirements, data on pupils and teachers, etc. Any public information about the district should be publicly available.

Fourth, the final design must be submitted to the Review Groups by a given date - with virtually no extensions.

Fifth, the Review Groups must review proposals for conformity to design requirements and for accuracy. Their most difficult job is to assess the reasonableness of the various predictions made by designers, and decide whether re-writes or revisions by the Review Group are required.

Sixth, the Review Group transmits the proposals to the planning group, which "runs" the various alternative plans.

Depending upon one's persepective, this approach either opens up the process to too many outsiders and unqualified persons, or, in contrast, imposes too many bureaucratic requirements on authors, thereby biasing the outcome toward the administrators' preferences. Either outcome can occur, but the district must try to find a middle ground between the authoritarian insistence that only certain persons are qualified to write proposals, and the libertarian extreme which holds that all persons are equally qualified. The best way to correct for extremes is to make all the procedures for project design and evaluation explicit and public, and to allow the Advisory Group to help in defining the procedures.

Innovation versus Analysis

Anyone can have a creative idea. But there is a difference between an idea and an innovative project design. It is not enough to speculate about educational changes; One must be prepared to argue intelligently in support of them. The project designer is presenting a case, an alternative to the district's status quo. And the burden upon him is not unlike the burden upon the debater who is advocating a new belief or policy.

The project design, therefore, must include the following:

(1) A brief description of the project proposal, highlighting its salient features.

(2) A statement of the Indicators that will be affected by the project and how they will be affected.

(3) The resources required for the project, including staff, space, equipment and materials.

(4) A summary of the expected costs, using the same categories as the program-budget.

(5) A rationale or defense of the idea, showing the reasons that the designer believes it will achieve the results; this includes research data, expert

opinions (documented), information about programs in other school districts, etc.

(6) In the case of facilities construction projects, there should also be an estimate of the number of student stations or rooms that will become available, and the years in which they will become available.

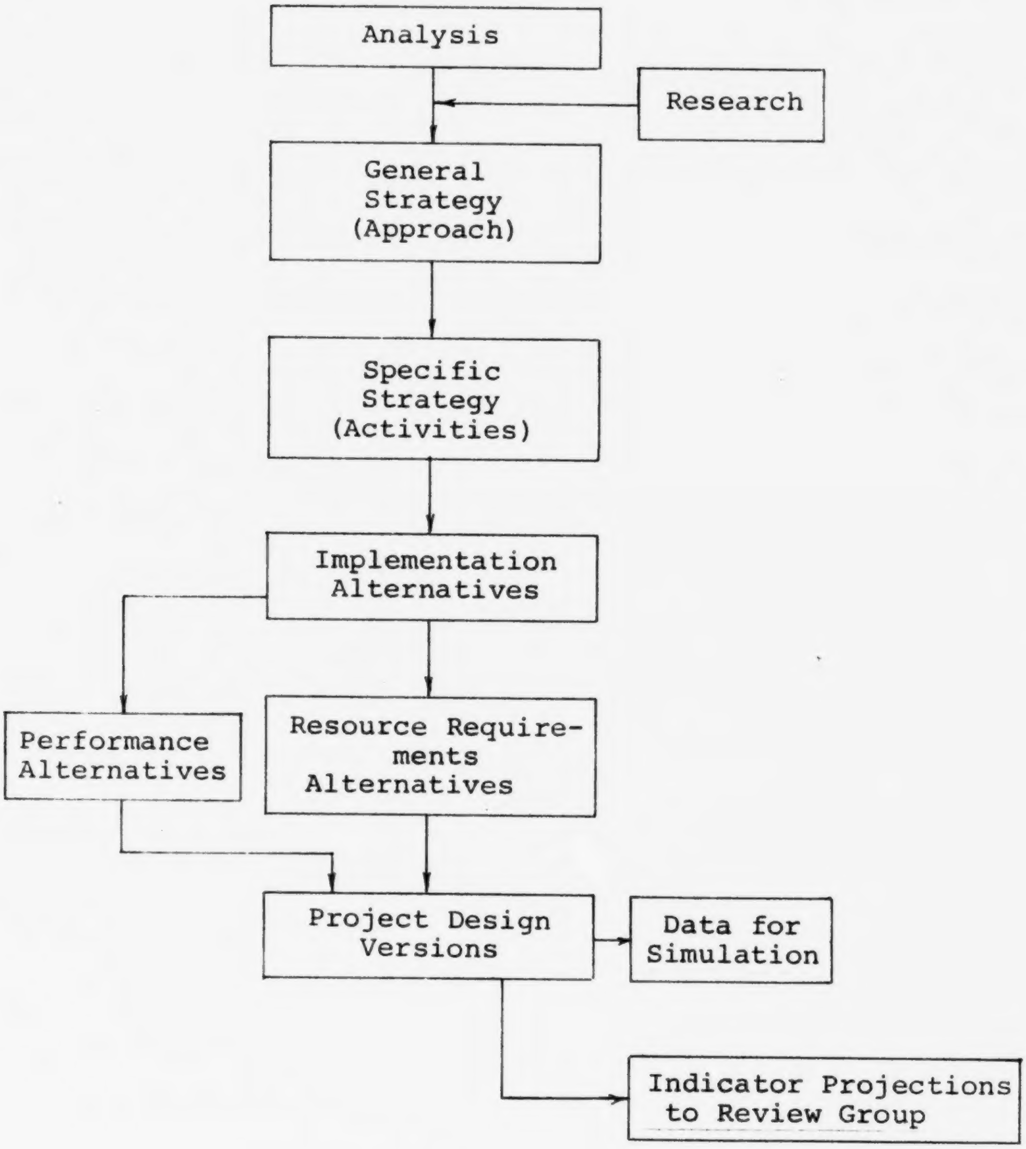
Each project proposal provides this data for the five-year planning period - even if the project will not be operational during the entire period. Designers must specify what all the costs will be in each year (allowing for raises, etc.), and estimate expected impact on all of the district's Indicators in each year.

Project Design Strategy: A Systems Approach

In a sense, the project design process is a miniature version of the overall STEP planning system, except that the designers are given the goals, objectives, priorities, and constraints (in the Policy Memo and at the "Bidder's Conference") and must plan within that structure. Once these overall guidelines are established, and once project design teams are formed, the members of those teams may elect to develop projects in any way they wish. The approach described in this section, as summarized in Chart III.5-3, is a general systems approach to project design, and may be detailed to the preferences of the particular design group.

Chart III.5-3

Project Design Strategy


Analysis
Research
General Strategy (Approach)
Specific Strategy (Activities)
Implementation Alternatives
Performance Alternatives
Resource Requirements Alternatives
Project Design Versions
Data for Simulation
Indicator Projections to Review Group

The process begins with a post-policy analysis, that is, an analysis built on goals and constraints which are already determined. The focus of the analysis phase is an identification of the problems and limitations of the TPS program which are believed to be causally related to the needs identified in the Policy Memo; the group should attempt to assess, for example, which aspects of the existing program have caused the district to be performing at levels on the Indicators lower than the desired or acceptable levels. In some cases, the performance is attributable to a whole area of activity or service not now being provided in the district, in which case the analysis would suggest a whole new program or function to be added to the district. In most cases, though, the existing deficit is due to some presumed weakness in an existing program or service offered by the district. Analysis can generate many hypothetical explanations to account for poor or inadequate performance; it may be argued, for example, that a given program is:

- making inefficient use of current resources
- underfinanced, so that there are not enough resources to "make a dent" in the problem
- using obsolete, ineffective, or inappropriate techniques
- is being retarded by incompetent or underproductive staff

Notice that these, and other speculations, are hypotheses, since, in most cases, they are testable assumptions which have not been tested. But, since it is generally awkward to attempt an experimental verification as part of the analysis, the next stage is generally a research of relevant educational research and expert opinion. Here there will be frustrations; even if the design group makes extensive use of the ERIC information system, or the State's Educational Improvement Centers or College Libraries, it will discover that most existing educational research is not very useful in designing improved educational practices (partly because it is not designed for that purpose) and frequently based on very weak scientific verification. For these reasons, and others, it is frequently useful to talk directly with educational innovators, both in the community and elsewhere, and, if funds are available, to secure consultant assistance. The result of the research phase, thus, should be two-fold:

- first, greater clarification about the nature of the problems and causes of the poor performance, and,
- second, ideas about program modifications or alternative approaches that might address the goals more effectively.

Usually, persons motivated to participate in design groups will already have "pet" ideas and approaches, even before the analysis is performed. While these ideas may ultimately prove useful, all ideas must be intelligently reviewed, and, where-ever possible, tested by appealing to existing literature or expert opinion; it is exceedingly unlikely, given the great variety of education in the world, that anyone will propose an approach that has not been tried and informally tested somewhere already.

The design team is now at a point where they can consider additions to the district's programs. If they have, as a result of analysis and research, determined that some part of the district's programs should be eliminated or replaced, they must consider the development of negative or replacement projects -- both of which are discussed in the next section. But, since it is extremely difficult to get rid of activities that have been traditionally a part of the district -- especially if there are no alternatives which have been convincingly shown to be better -- the group will probably be concerned with new activities which will add to the resources utilized by the district, and therefore, to costs.

Given a general strategy to achieving the desired outcomes, the group then develops some specific activities, treatments, and services. At this level of planning, the more detailed the agreements the better; this part of the process should continue until the members of the team can almost estimate the manpower and cost requirements of the project and predict the number of students to be affected and probable results.

Before beginning to calculate the details of the project, however, it is wise to consider alternative implementation strategies. Will the proposed activities begin in Year 1 of the planning period, or some later date? Will it be implemented at a full level of activity, or will it be phased in gradually?

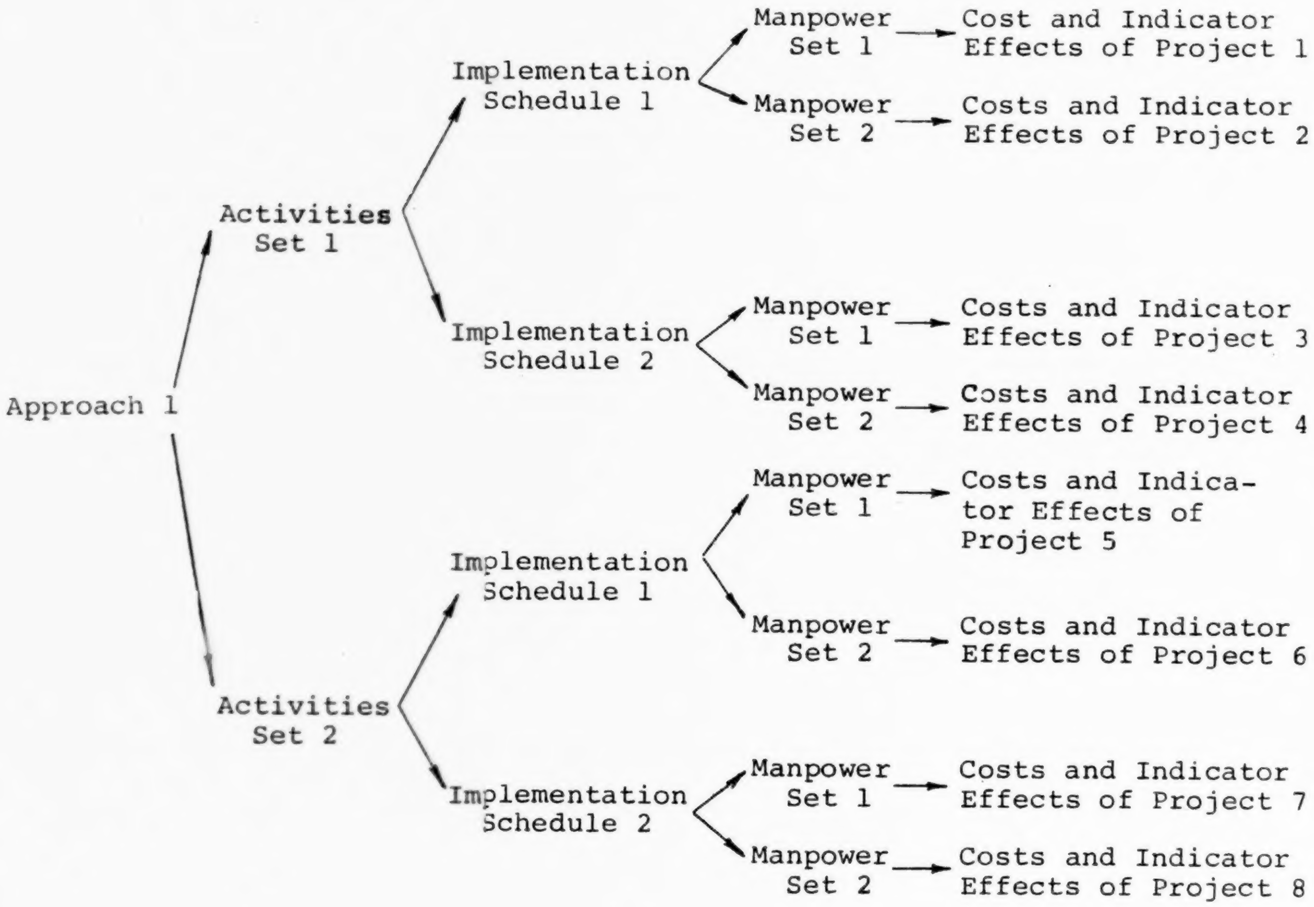
These implementation alternatives show that there are many options still available to the group, even when a detailed activity idea has been worked out.

The group may agree on a single implementation approach, or it may continue to entertain two or three different ones. For each alternative implementation approach, the group should then estimate the manpower requirements of the project, using the manpower types descriptions in section III.3 of this manual. Out of these estimates the group must develop, simultaneously, project cost requirements, by Staff Type, Capital Outlay, and Non-staff/Non-C.O for all five years of the planning period. (Obviously, these costs are "O" in the years in which the project is not proposed to be active). Further, they must, as a group, develop their best collective estimate of what would happen to the district's performance on the Indicators -- all the Indicators -- if the particular project were added to the base case (ignoring any other projects that might be added).

At this point, there may be a single project design, or there may be several. As Chart III.5-4 shows, starting with a single overall approach, and considering two different activity sets, two different implementation plans for each activity, and two different manpower approaches for each implementation plan, the group could generate eight functionally distinct projects. Whatever the number, however, any project design which the team wishes to be considered for implementation must have certain data associated with it, namely, that data required to fill out the

Chart III.5-4

Branching of Project Design Decisions


Approach 1
Activities Set 1
Activities Set 2
Implementation Schedule 1
Implementation Schedule 2
Implementation Schedule 1
Implementation Schedule 2
Manpower Set 1
Manpower Set 2
Manpower Set 1
Manpower Set 2
Manpower Set 1
Manpower Set 2
Manpower Set 1
Manpower Set 2
Cost and Indicator Effects of Project 1
Costs and Indicator Effects of Project 2
Costs and Indicator Effects of Project 3
Costs and Indicator Effects of Project 4
Costs and Indicator Effects of Project 5
Costs and Indicator Effects of Project 6
Costs and Indicator Effects of Project 7
Costs and Indicator Effects of Project 8

Planning Unit input form. It must include Enrollment Base estimation, number of positions of each Staff Type in each of the five years, staff costs, Capital Outlay Costs in each of the five years, Non-staff/Non-C.O. costs in the period, and expected categorical revenue for each of the five years. Further, the project design data is constrained similarly to other Planning Unit data, namely there must be at least as many separate PU's as there are sites or programs affected by the proposed project, so that the district's analysts may require the project designers to break apart the project design into several parts -- even though the designers may stipulate that all parts must be run together as part of any simulation. The design group must, further, project the impact of the project on all the district's Indicators for each year of the plan -- or, if it cannot do so -- designate the Review Group to do the projection (and accept the judgment of that group).

Negative and Replacement Projects

There are two important reasons to develop negative projects, projects in which the district discontinues some activity or service. First, if the currently accepted plan proves to be too costly, so that "cuts" must be effected, special design teams may be formed to find ways to eliminate local expenditures. Second, if analysis indicates that an existing problem could be well addressed by eliminating a given program or activity, then the designers may elect that strategy as a means to achieving district objectives. Importantly, the strategy and procedures appropriate to "positive" projects are appropriate to negative ones as well; indeed, if planners were to use sophisticated techniques to decide what to add to the district and then use arbitrary incrementalistic routines to effect cuts, the net result would probably vitiate the positive planning that was done. Thus, a negative project includes much of the data associated with a positive project, mainly costs and staff requirements -- except that they are expressed in negative quantities, so that the simulator will subtract, rather than add, from the base case plan. There must also be a performance forecast associated with negative projects. In the case of a cost-cutting project, the forecast should show that there is no difference between the base case forecast and the forecast associated with adding the negative project, or that the performances changes are small and on low priority Indicators. In the case of a negative project generated by analysis, the designers should predict the expected gains on the Indicators associated with their negative project.

In developing negative projects, the same overall strategy is recommended: analysis, research, general approach, specific activities (to be eliminated), alternative implementation schemes, and alternative cost and performance forecasts associated with the alternative implementation ideas.

A more complicated case of project design is the "replacement project," in which the designers propose first, to add a certain activity or function and second, to eliminate some existing activity. If the designers believe that this is necessary to help the district achieve its objectives, it may submit the replacement project as a single project design. If it believes that either the positive or negative aspects of the design may be implemented singly, it may submit them as a positive and negative project design.

Fairness and Reasonableness

In many federal and state educational programs, proposals are written after the decision is made to fund the proposal; in these cases, proposals are thought of as an onerous administrative ritual, something you have to do to "get your money." Because of this experience, many educators believe that all proposals should be rewarded with approval.

When this attitude is compounded by a more general attitude, that every author tends to believe his proposals are good, we confront a potential problem. By "opening up" the project design phase, we have made it necessary for some competitors to lose!

And, because our particular contest cannot be decided by a random drawing from a fishbowl full of project numbers, we have left ourselves open to charges of bias or "politics." Indeed, if the inner circle of the district's administrators has no intention of endorsing any ideas but its own, then the project design activity has been a charade.

Fairness and reasonableness are relative to the district-community context, and we can give no strict criteria for achieving them. The manager of the STEP system must keep these requirements in mind and remember that many persons, in and out the bureaucracy, will view STEP as an effort to disguise old-fashioned decision-making in fancy technological trappings. He should see that this does not happen.

III.6 COST-UTILITY ANALYSIS PROCEDURE

Introduction

Using the procedures defined so far, the TPS will be able to generate alternative plans in which the multi-year costs, revenue feasibility, and estimated performance on indicators will appear. It is possible that this information in itself can be inspected by senior planners and policy makers to determine the "best" alternative plan which is economically feasible. If, however, the number of Indicators is large -- as it is in the current version of STEP -- and if the number of alternative plans to be evaluated is large -- as it may be within a year or two of STEP's implementation, then it may be impossible to observe by simple inspection the best plan, even though it will still be possible to eliminate by inspection those plans which exceed the revenue constraints or which fail to achieve the highest priority objectives. If the latter is the case, a calculation procedure is necessary to develop a ranking of the alternative plans. In this section of the manual a recommended procedure is outlined whereby the cost and utility of alternative plans may be calculated in such a way that the alternative plans may be ranked in aggregate five-year utility; it is a type of cost-utility assessment based on "hard" or quantitative weighting of the diverse Indicator effects, and, for that reason, it is rather difficult for some planners to use (that is, intellectually difficult rather than technically difficult). Ultimately, the users may opt for a less formal utility rating system, and, therefore, the next section is devoted to a general discussion of utility ranking procedures, of which the procedure recommended is a detailed instance.

Cost-Utility Based Resource Allocation: Conceptual Approach

Chart III.6-1 shows the overall resource allocation process at a summary level. The first stage is the actual development of project designs -- the units of which alternative plans will be constituted. The first actual step in the resource allocation process is the definition of the alternatives to be considered, that is, forming project designs into combinations or sets, each of which is defined as an alternative plan. The number of alternative plans may be very large, notice, even if the number of of project designs is rather small. Chart III.6-2 shows that there are fifteen alternative plans which may be generated from only four project designs, and Chart III.6-3 shows how quickly the number of possible alternatives escalates, approximately doubling with each project design that is added. Thus, given six project designs, the district could, if it wished, generate sixty-three alternatives to the base case, all with different characteristics. Obviously, generating all possible alternatives, while easy enough for the computer forecasting programs, would result in great EDP costs and, more importantly, generate more plans than could be reasonably studied in the

Chart III.6-1

Resource Allocation

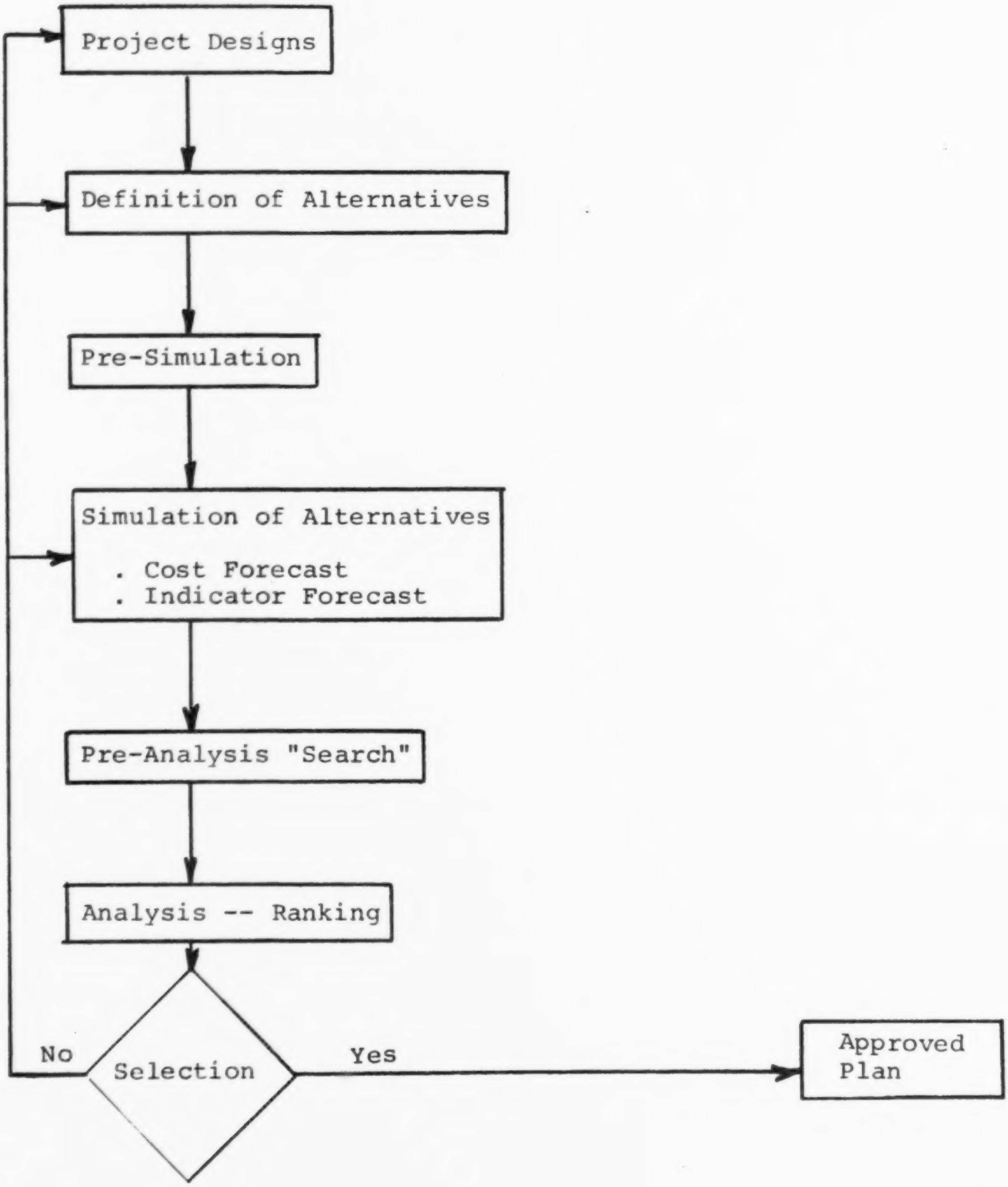

Project Designs
Definition of Alternatives
Pre-Simulation
Simulation of Alternatives
. Cost Forecast
. Indicator Forecast
Pre-Analysis "Search"
Analysis -- Ranking
No
Selection
Yes
Approved Plan

Chart III.6-2

POSSIBLE ALTERNATIVE COMBINATIONS

4 Project Designs

COMBINATION NO.	ALTERNATIVES INCLUDED
1	1
2	2
3	3
4	4
5	1,2
6	1,3
7	1,4
8	2,3
9	2,4
10	3,4
11	1,2,3
12	1,2,4
13	1,3,4
14	2,3,4
15	1,2,3,4

Chart III.6-3

THE DOUBLING OF POSSIBLE COMBINATIONS

NUMBER OF ALTERNATIVES	TOTAL NUMBER OF POSSIBLE ALTERNATIVE COMBINATIONS
1	1
2	3
3	7
4	15
5	31
6	63
.	.
.	.
.	.
12	4095
.	.
.	.
.	.
N	2^N-1

time available. (Since performance forecasts are done subjectively and manually, moreover, the effort involved in generating sixty-three performance forecasts would be highly onerous.) For these reasons, certain pre-analysis activities are recommended to "cut down" the number of alternatives to a reasonable size -- without running the risk of missing the best possibility. Two important techniques for achieving this objective are: (a) not considering any alternative in which the total cost in any of the five years is outrageously high, and (b) not considering any combinations in which two mutually exclusive projects appear, that is two projects which address the same ends at a sufficiently high level that their combined output would exceed the requirements, or that could not both coexist because they are variants of the same approach.

This preliminary investigation may result in a workable number of alternatives, less than fifteen for example, or it may still leave a very large number of alternative possibilities. At this point, the planners may go directly to the simulation stage, or they may do further pre-simulation analysis, by further investigating the total costs and logic of the remaining alternatives, or by stipulating, for explicit reasons, that certain cases will not be considered. Ultimately, the planning unit data for the remaining alternatives is run in the cost/resource requirements forecast and the Indicator projections from the project design reports are consolidated into performance forecasts for the alternative plans by the Review Group. This latter activity may require further expert judgment from the Review Group, because the effects of certain projects in combination may be presumed to be different from the simple addition of expected effects for the individual project designs. (See Delphi appendix for a suggested technique for reaching consensus of estimating Indicator interactions.)

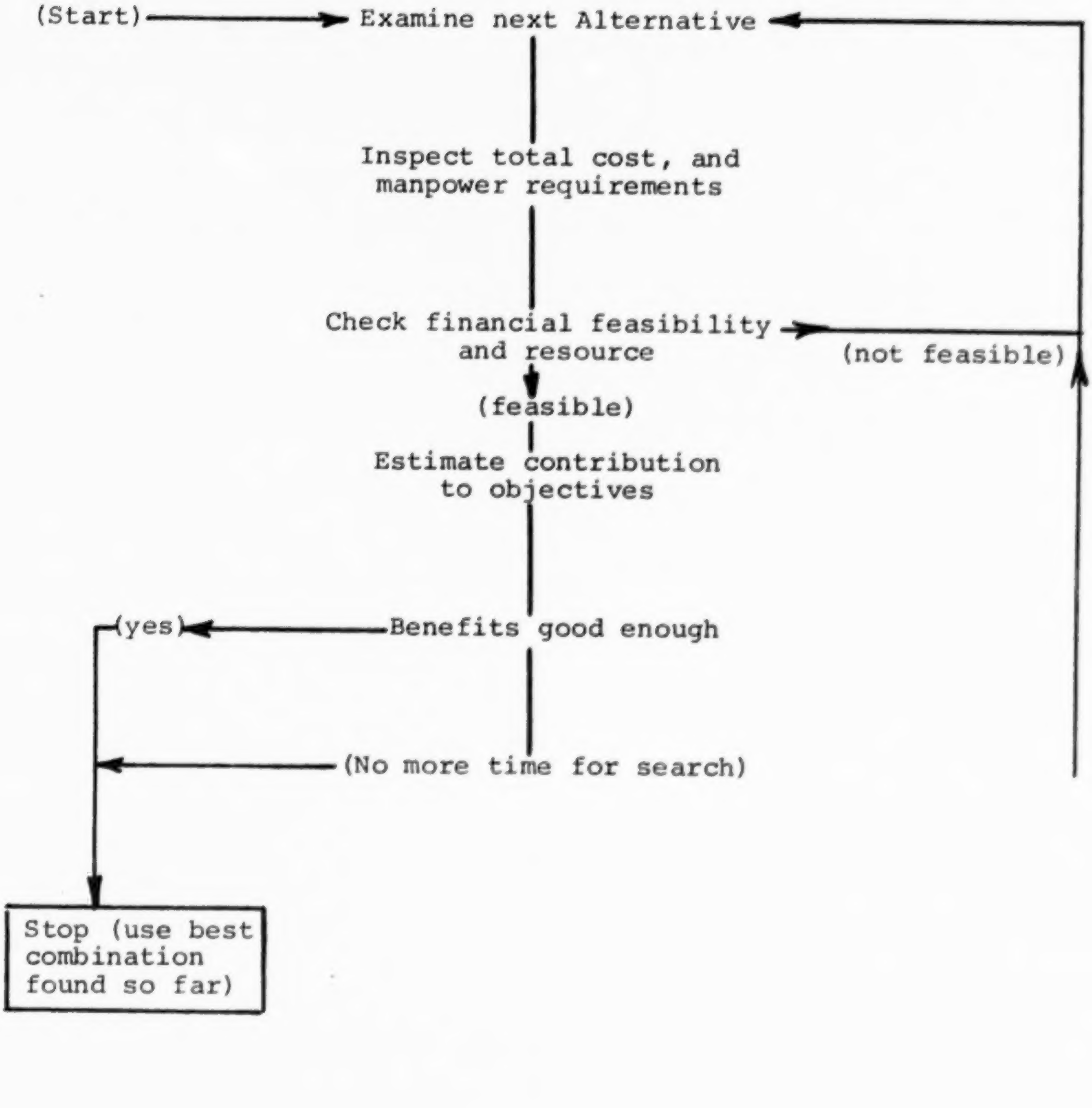
Once the cost/resource requirements of the alternatives have been forecasted and the impact on Indicators estimated, the data is ready for simulation. The planners, however, may wish to further simplify the process by performing a pre-analysis search; in the search, again, whole alternatives may be eliminated for cost reasons or logic reasons (assuming some of the cost and logic problems were not detected in the earlier screenings); given the final list of alternatives from which to select, the planners may "search" for one acceptable plan, that is, a plan which achieves all or most of the desired levels in Indicators by Year 5. Once such a plan is found, by relatively simple inspection, one then considers other plans, referring to the first acceptable plan as a benchmark; in the search process, one is attempting to reject alternatives -- if they fail to perform as well as the first case chosen -- or find a new benchmark -- if one of the cases proves to be better (less expensive, or more productive in achieving goals). The overall search procedure is shown in Chart III.6-4. As the chart indicates, the search procedure is an acceptable way to find a "best plan" subject to time constraints; one must be prepared to risk the possibility that the next alternative considered after the cut-off time is better than the current benchmark plan.

An alternative to the "search" or heuristic approach is to formally evaluate all alternatives generated in the simulation stage according to a formal cost-utility decision model. A detailed approach to that process is described in the next section of the manual.

Once the cost-utility evaluation is completed -- using either a heuristic or formal approach -- a best available plan is identified. If the plan is acceptable, it is approved for implementation, and the Year 1 budget is deduced from the Year 1 cost requirements forecast for the accepted plan. If the best available plan is not good enough, however, it may be necessary to reiterate the decision process by running additional alternative plans with the existing project designs, by defining new combinations based on adjusted or modified versions of existing designs, or by actually re-opening the project design effort to produce new candidate projects. If, after reasonable re-iteration no acceptable plan can be found, it may be necessary, as a last resort, to modify the goals and objectives of the district.

Chart III.6-4

SEARCH PROCEDURE


(Start)
Examine next Alternative
Inspect total cost, and manpower requirements
Check financial feasibility and resource
(not feasible)
(feasible)
Estimate contribution to objectives
Benefits good enough
(yes)
(No more time for search)
Stop (use best combination found so far)

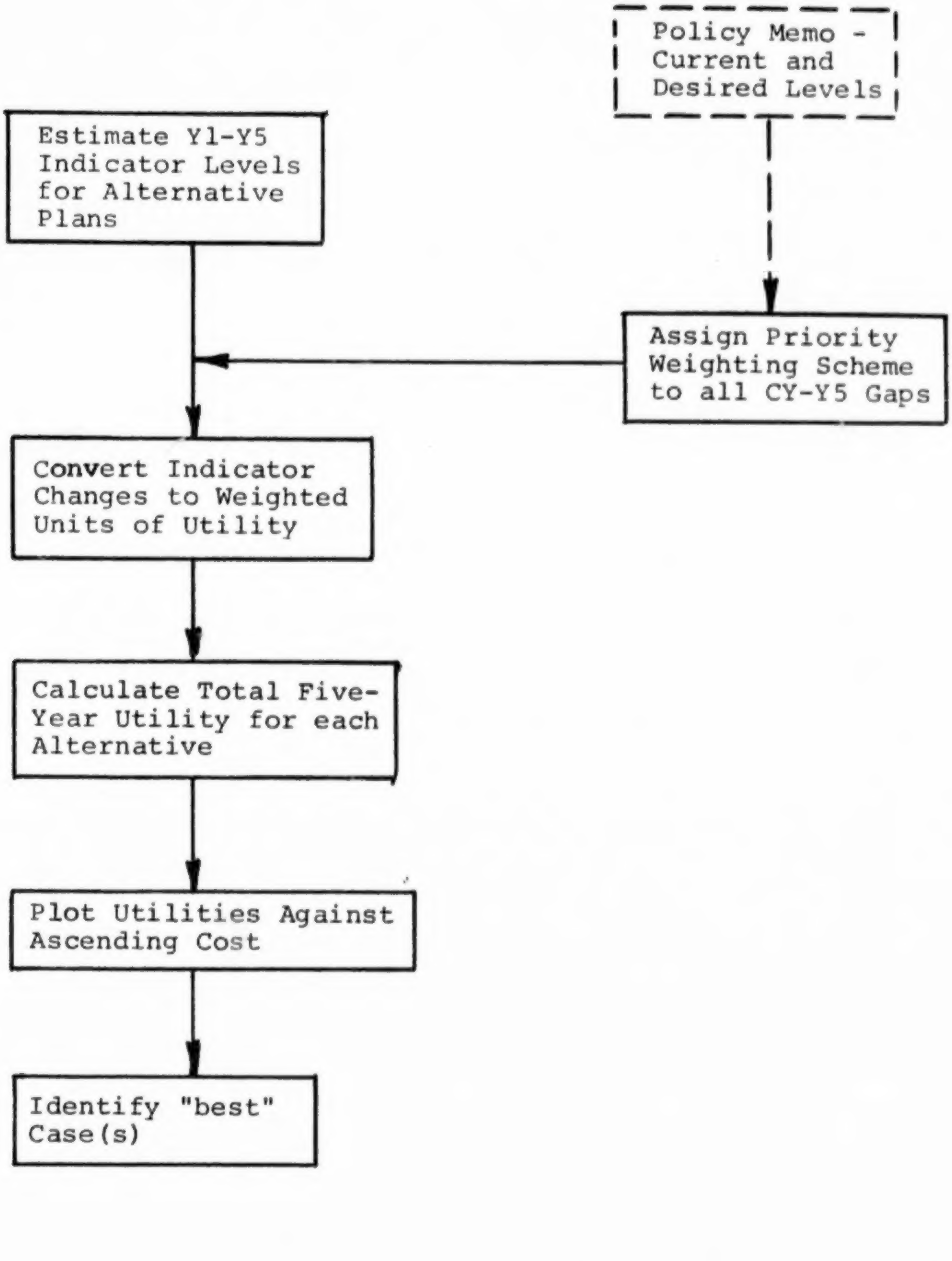
A Model for Formal Cost-Utility Evaluation in STEP

The state of the art of knowledge about education and instructional technology is not yet sufficiently advanced to permit planners to identify the "optimum" course of action with mathematical precision. There are, however, imperfect quantitative techniques which help clarify the value of the alternatives, based on mathematical expressions of the values of the policy makers. Such techniques are known variously as "subjective cost-benefit" analyses or cost-utility analyses. Such a procedure for use in STEP is summarized in Chart III.6-5.

The process begins with the simulation of the set of identified alternatives, as described above. For each alternative, there is a set of anticipated outputs on Indicator scales for each of the years in the planning period. These outputs are treated as proportions of the gaps between the CY level and the desired Y5 level, and are all consolidated into a single scale of utility by multiplying the proportion of the gap closed in each year by the policy weight assigned to each gap. Then, the weighted outputs of each plan, on all Indicators, for all five years, are consolidated into a single utility score. The alternatives are arranged in ascending order of cost and the planners identify the plan with the highest expected utility, which is within the constraints of maximum allowable cost.

Chart III.6-5

Cost-Utility Evaluation Model


Policy Memo - Current and Desired Levels
Estimate Y1-Y5 Indicator Levels for Alternative Plans
Assign Priority Weighting Scheme to all CY-Y5 Gaps
Convert Indicator Changes to Weighted Units of Utility
Calculate Total Five-Year Utility for each Alternative
Plot Utilities Against Ascending Cost
Identify "best" Case(s)

To illustrate, suppose TPS were using four Indicator scales: Distance from Reading Grade Level; Drop-out Rate; Distance from Math Grade Level; Percentage in Substandard Facilities. Suppose that the base case estimation for performance was as follows:

Indicator	CY	Y1	Y2	Y3	Y4	Y5
Reading	-1.3	-1.5	-1.5	-1.8	-2.0	-2.2
Drop-out	15%	15%	17%	19%	20%	20%
Facilities	25%	25%	25%	20%	15%	15%
Math	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5

As part of the district's Policy Memorandum, the policy makers have indicated the following desired levels for these Indicators:

Indicator	Y1	Y2	Y3	Y4	Y5
Reading	-1.2	-1.0	-.7	-.5	-.2
Drop-out	12%	10%	8%	7%	7%
Facilities	25%	20%	15%	10%	10%
Math	-1.5	-1.2	-.5	-.5	-.5

By relating the desired levels to the anticipated, base case levels, we determine the following gaps:

Indicator	Y1	Y2	Y3	Y4	Y5
Reading	.3	.5	1.1	1.5	2.0
Drop-out	3%	7%	11%	13%	13%
Facilities	0%	5%	5%	5%	5%
Math	0	.3	1.0	1.0	1.0

Before considering the utility of alternative plans, it is necessary to consolidate the four scales of effect. This consolidation is effected by eliciting from the policy makers their value weights for the four classes of goals. Hopefully, before the development of the policy memorandum, but no later than the project selection phase, the policy making group is asked to make certain judgments about the priority of the various goals, which is translated into a weighting scheme for the Indicator gaps.

Developing the weighting scheme is a two-stage process. First the policy makers are asked to make pair-wise comparisons for each of the Year 5 Indicator gaps. The number of pair-wise comparisons is a function of the number of Indicators; the formula is -

$$\frac{N.(N-1)}{2}$$

Where N = equals the number of Indicators.

Thus, for four Indicators there would be six pairs, for five Indicators ten pairs, for six Indicators fifteen pairs, etc. A sample pair-wise ranking scheme is shown for the four Indicators mentioned earlier, in Chart III.6-6.

Using such a device, the analyst may count each (✓) as "1" and add the scores for each Indicator gap, for all persons participating. The resultant scores can then be used to rank the Indicator gaps from most to least important.

If ten persons, for example, participated in this exercise, the most often an Indicator could be checked on a given sheet would be three times, for three points. The maximum score for a given Indicator gap would be 30, and the minimum 0.

Suppose this activity were completed, and the scores for the Indicators were as follows:

Reading	28 Points
Drop-out	22 Points
Math	3 Points
Facilities	7 Points

It would follow, then, that the priority ranking would be:

Chart III.6-6

For each of the following gaps between desired and expected levels, check (✓) the one which is more important for the Trenton Public Schools

1.	Reading	(-2.2 to -.2)	__	or	Drop-out	(20% to 7%)	__
2.	Reading	(-2.2 to -.2)	__	or	Facilities	(15% to 10%)	__
3.	Reading	(-2.2 to -.2)	__	or	Math	(-1.5 to .-5)	__
4.	Drop-out	(20% to 7%)	__	or	Math	(-1.5 to -.5)	__
5.	Drop-out	(20% to 7%)	__	or	Facilities	(15% to 10%)	__
6.	Facilities	(15% to 10%)	__	or	Math	(-1.5 to -.5)	__

Note: In actually devising such an instrument the order of the pair items should be randomized, and even duplicated with right-left transpositions.

Priority	Indicator
1	Reading
2	Drop-out
3	Facilities
4	Math

This ranking is then used as the basis for the weighting scheme, in which each gap is assigned a number of "utiles." A portion of the instrument to be used is shown in Chart III.6-7. The complete instrument should elicit a ratio comparison between each Indicator gap and the lowest priority gap. To add precision, a judgment should be elicited for each Indicator gap and all Indicator gaps of priority lower than it; the latter will add precision and consistency to the data, but may make the instrument quite long.

The ratings can be treated as weights; "about equal" = 1; between equal and twice as high = 1.5; about twice as high = 2.0, etc. Again, the mean ratio judgments are calculated; if comparisons are all made in terms of the lowest priority goal, the calculation is straightforward:

4:3:2:1

If inter-rank comparisons are used, the following inter-rank ratios are computed:

```
4:3:2:1
  3:2:1
    2:1
```

Chart III.6-7

Utile Assignment Instrument

1. Previously this group indicated that achieving a level of "10% students in sub-standard or deteriorating facilities" is a higher priority goal than achieving an "average -.5 years below grade equivalent in Math/Science performance." How much higher a priority would you consider it to be:

    - about equal (only very slightly higher) ____
    - higher but not twich as high ____
    - about twice as high ____
    - more than twice as high, but not three times ____
    - about three times as high ____

    etc.

2. Previously this group indicated that lowering the "drop-out rate to 7%" is a higher priority than achieving an "average -.5 years below grade equivalent in Math/Science performance." How much higher a priority would you consider it to be:

    etc.

In the first case, an arbitrary base -- such as 1, 10, 100 -- is assigned to the lowest priority Indicator gap, and the weights for the higher gaps are calculated by multiplying the average ratio by the base weight. If, for example, a base of "10" is assigned to the Math gap, and the Facilities gap is shown to be 1.7 as important as the Math gap, the weight of the Facilities gap is "17."

In the second case, the procedure just described is used to weight the first set of ratios (in which each Indicator gap is compared to the lowest Priority gap), and the value of the next-to-lowest Indicator gap becomes the "base" in the next tier of ratios. Thus, if Facilities received a "17" in the first tier, it would be the base in the second tier. To illustrate, suppose the following ratios were elicited:

1:1.7:2.3:3
1:1.2:2
1:1.9

Assigning a base of "10" to the lowest ranked Indicator gap, we would calculate the following weights:

10:17:23:30

17:20.4:34

20.4:38.8

Notice that if all comparisons were made to the lowest priority gap only, the first tier of weights would serve as the weighting scheme (10,17,23,30); if the multi-tiered approach is employed, the mean weighting of the Indicator gap in each tier is computed. In the illustrative data presented, the weight would be:

Indicator Gap	Weight ("utiles")
Reading	34.3
Drop-out	21.3
Facilities	17
Math	10

We have now calculated priority weights based on the judgment of the policy-makers. The fact that the values are expressed quantitatively does not interfere with the fact that the judgments are the preferential, political, and value inputs of the policy makers; moreover, they may be communicated to persons interested in, or unhappy with, the district's resource allocation policies, and used as a basis for political or educational debate. The priority weights may now be used to evaluate the utility of alternative plans.

To continue, consider three alternative plans, A, B, and C. The Review Group has estimated the following Indicator levels for each plan(see Chart III.6-8):

By relating these anticipated levels to the base case predictions and desired levels for each year, we compute the following "proportion of gap closed" for each alternative,

Chart III.6-8

Indicator Estimates for Three Alternative Plans

PLAN	Y1	Y2	Y3	Y4	Y5	
A	-1.5	-1.2	-1.0	-.8	-.8	
B	-1.5	-1.5	-1.5	-1.0	-1.0	Reading
C	-1.2	-1.2	-1.2	-1.2	-1.2	Indicator Level
A	15%	10%	10%	10%	10%	Drop-out
B	15%	15%	15%	5%	5%	Indicator Level
C	15%	17%	19%	20%	20%	
A	25%	25%	20%	15%	15%	Facilities
B	25%	25%	20%	15%	15%	Indicator Level
C	25%	25%	20%	15%	15%	
A	-1.5	-1.5	-1.5	-1.0	-1.0	
B	-1.5	-1.0	-.5	-.5	-.5	Math
C	-1.5	-1.5	-1.5	-1.5	-1.5	Indicator Level

for each Indicator, for each year. These proportions are shown in Chart III.6-9. The gap weights are those determined earlier in this section.

Using the gap weights, we may convert the expected outcomes of each alternative plan to an aggregate utility, by multiplying the expected Indicator gaps closed, for all years, by the gap weight. This conversion is performed to produce Chart III.6-10.

We have calculated, thus, that the plan highest in expected utility, according to the value inputs in this hypothetical case, is Plan A, followed closely by Plan C, and then Plan B. Obviously, no such comparison could be made by simple inspection of the projections themselves. The "best" plan, therefore, from a utility perspective, is Plan A, but this need not be the plan recommended. If all plans are within an allowable cost range, then A should be recommended -- even if it costs less than B or C. If, however, A costs too much, but C is within range, then C is highest in cost-utility. The conceptualization of this choice is shown in Chart III.6-11, in which seven alternatives are plotted. Notice that the plan highest in utility, in this chart, is Plan G, but it exceeds the allowable cost ceiling. Plan F is within the allowable range, but is lower in expected utility than Plan E -- the "best plan." If, for some reason, Plan E cannot be approved, the "second best" plan is C.

Chart III.6-9

Proportion of Gaps Closed

Plan	Y1	Y2	Y3	Y4	Y5	Total	Indicator	Gap Weight
A	0	.6	.9	.8	.6	2.9	Reading	34.3
B	0	0	.3	.7	.6	1.6		
C	1.0	.6	.7	.5	.5	3.3		
A	0	1.0	.8	.8	.8	3.4	Drop-out	21.3
B	0	.2	.4	.8	.8	2.2		
C	0	0	0	0	0	0		
A	1	0	0	0	0	1	Facilities	17.0
B	1	0	0	0	0	1		
C	1	0	1	1	1*	4		
A	1	0	0	.5	.5	2.0	Math	10.0
B	1	1*	1	1	1	5		
C	1	0	0	0	0	1		

---

* When a plan exceeds the gap, it may be regarded as 1.0, or, in some cases, proportions might be subtracted for exceeding the goal.

Chart III.6-10

Aggregate Utilities for the Alternatives

	Reading	Drop-out	Facilities	Math
Plan A	2.9	3.4	1.0	2.0
Plan B	1.6	2.2	1.0	5.0
Plan C	3.3	0	4.0	1.0

Multiplying Outputs by Gap Weights:

	Read.	Drop-out	Fac.	Math	Total
Plan A	100.3	72.4	17.0	20.0	209.7
Plan B	54.9	46.9	17.0	50.0	168.8
Plan C	113.2	0	68.0	10.0	191.2

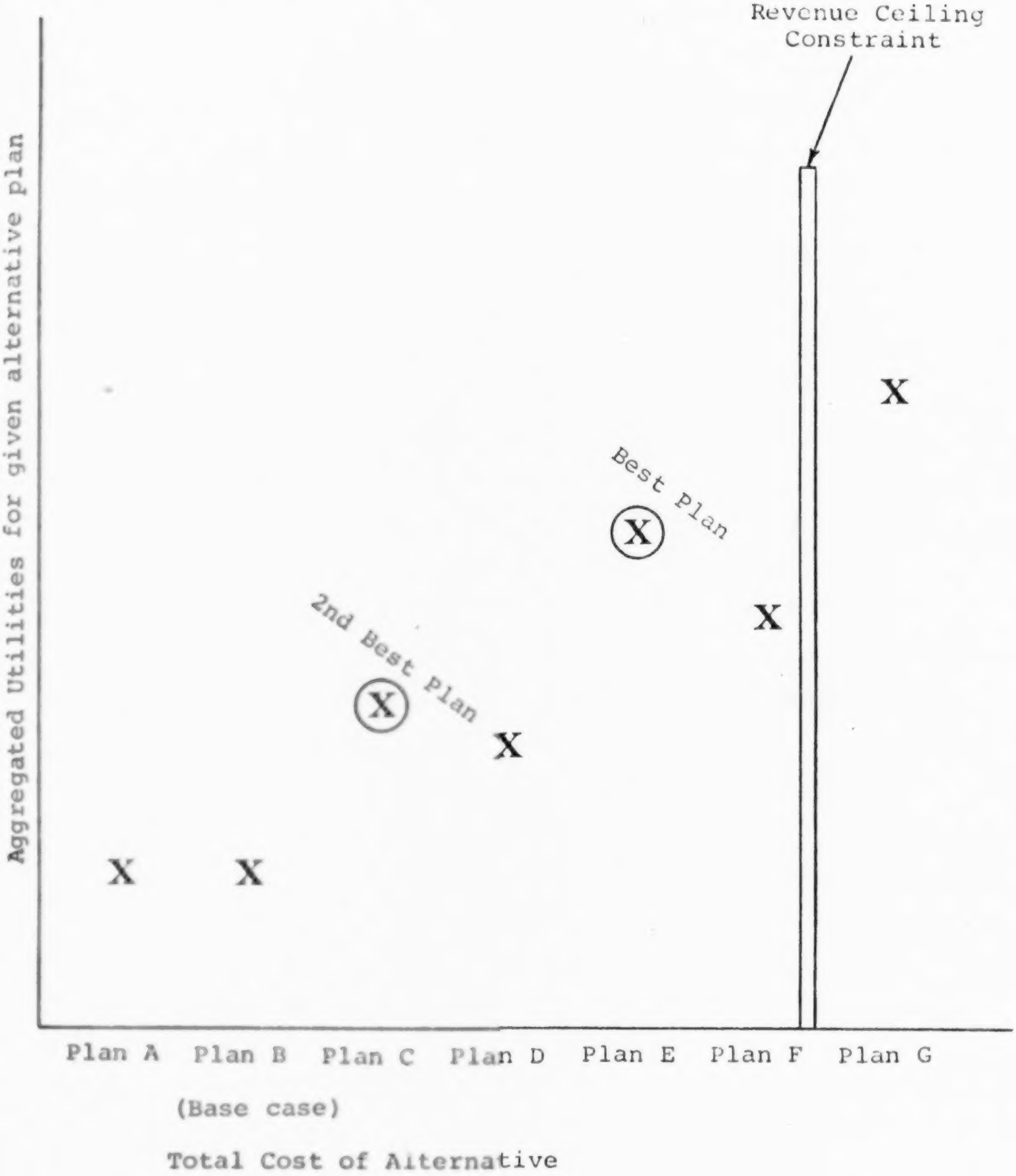


Chart III.6-11 Illustration of Cost-Benefit Comparison

Review of the Cost-Utility Model

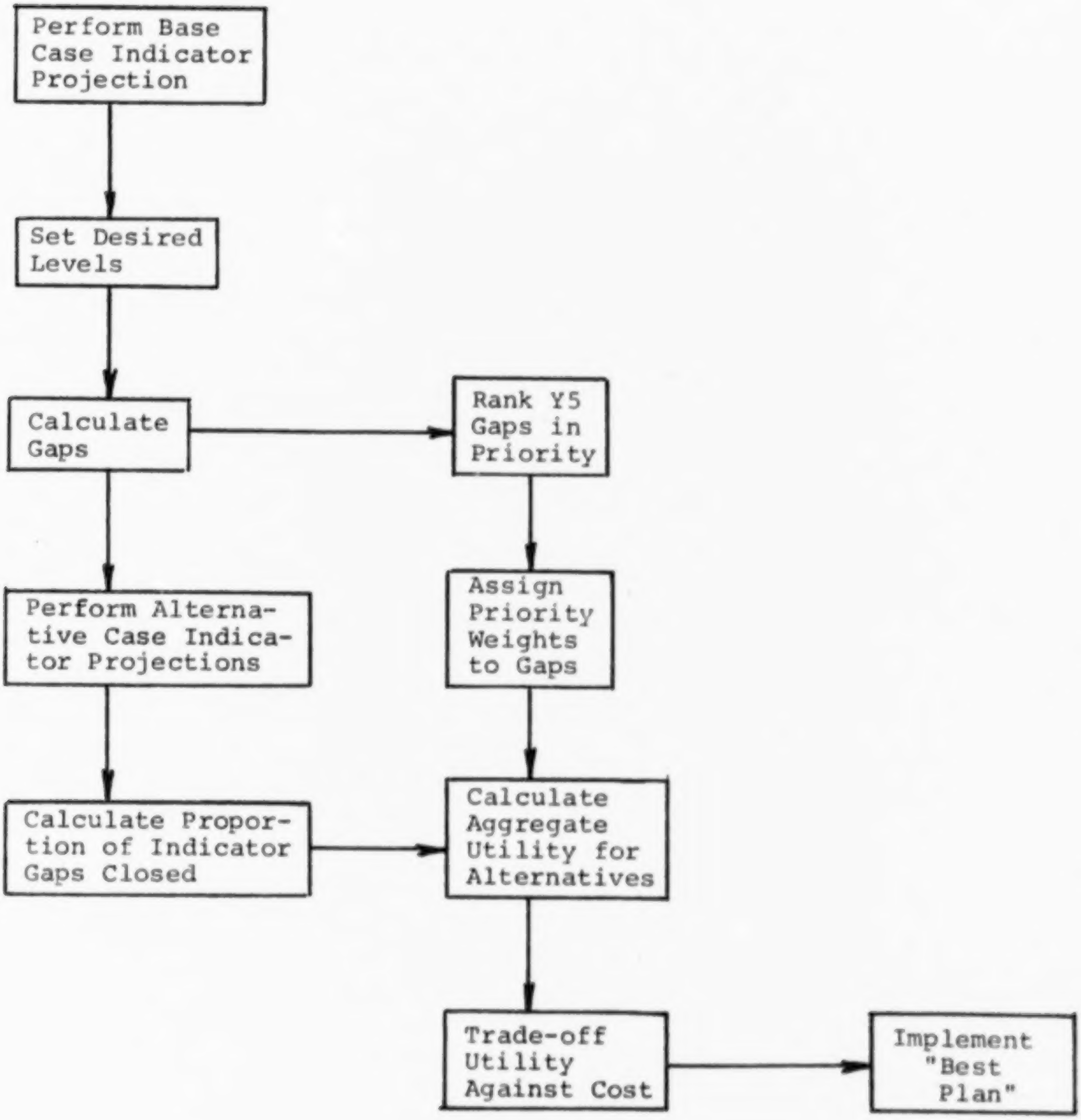
The steps in the cost-utility decision model are discussed in Chart III.6-12.

It is apparent that, given many Indicators and alternatives, the work and calculation may become extensive, and that many of the judgments will prove difficult to make. Because of the essential nature of the activity, however, it may be judged worth the effort.

One final comment: the numerical values associated with utilities *cannot be viewed as precise ratings*, because of the many subjective estimations and judgments on which they are based. In practical use, the planners will generate two or three good plans, rather than a single "best" plan, and use other considerations in identifying the plan best suited to the district's needs.

Chart III.6-12

Steps in Cost-Utility Model


Perform Base Case Indicator Projection
Set Desired Levels
Calculate Gaps
Rank Y5 Gaps in Priority
Perform Alternative Case Indicator Projections
Assign Priority Weights to Gaps
Calculate Proportion of Indicator Gaps Closed
Calculate Aggregate Utility for Alternatives
Trade-off Utility Against Cost
Implement "Best Plan"

Appendix A:

THE DELPHI TECHNIQUE APPLIED TO PREDICTING EFFECTIVENESS OF EDUCATIONAL PROJECTS

Developed for GSS by:

Edward E. Legasey

THE DELPHI TECHNIQUE APPLIED TO PREDICTING EFFECTIVENESS OF EDUCATIONAL PROJECTS

Educational Intermediate Unit Study Project
Fels Institute
University of Pennsylvania

Edward E. Legasey
May, 1969

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THE DELPHI TECHNIQUE APPLIED TO PREDICTING EFFECTIVENESS OF EDUCATIONAL PROJECTS

Educational Intermediate Unit Study Project
Fels Institute
University of Pennsylvania

Edward E. Legasey

May, 1969

This report describes an experiment in which the DELPHI technique is used to estimate the effect of proposed educational projects on pupil and system performance in a Pennsylvania school district. This experiment was performed in a district with about 13,000 pupils. It is a suburban district, but one which includes a large mill and, therefore has a fairly wide spectrum in terms of socio-economic backgrounds.

This work is part of the development of an Education-Planning-Programming-Budgeting System. In any such system one vital step is to select those projects which will cause the school district to progress most rapidly toward its objectives and which are feasible in terms of revenues and manpower. To do this in turn requires some estimate of the effect of any proposed project on measures or indicators of school and pupil performance. (The objectives would be stated in terms of these measures.) Since there is no well-developed theory of learning, there is no theoretical basis for calculating the effect of any project on output indicators from a description of the school and the project. These estimates have to be made subjectively by appropriate experts. The DELPHI technique is a technique for eliciting the opinions of experts in a way which eliminates the affects of personality and still retains the benefits of group interaction and the development of a group consensus.

Appendix I describes in more detail the purpose of the experiment and the way in which the experiment was carried out. This document was provided to the school district in order to obtain their approval to perform the experiment.

Appendix II contains the instructions which were given to each participant. Appendix III contains samples of the forms used.

Note from Appendix II that the experts considered three program sets. The first set containing two different cases making actually four different projects. In every case, the experts were to assume that these projects were added to the existing school district. Since the experts were drawn from the district itself, it was presumed they understood the present status and plans of the district.

The four projects whose effects were to be estimated are briefly as follows:

Program Set 1 - Case I. The school was to operate as at present, hiring enough additional staff to maintain the current pupil/teacher ratio as the enrollment rose (an enrollment increase was forecasted), and to replace teachers who resigned or retired. In other words, this required the experts to estimate the performance of the system assuming the school ran pretty much as planned.

Program Set 1 - Case II. In this case, the effective student/teacher ratio increased, because teachers were hired only to fill vacancies, but not to compensate for increases in enrollment.

Program Set 2. This was a project to utilize educational television. The details of use are described in Appendix II.

Program Set 3. The project was to provide an extensive on-going, in-service course for elementary teachers in math and reading.

The experts were asked to evaluate the affect of these projects in terms of three specific indicators of performance:

-Math achievement, specifically the achievement in math attained by the lowest tenth of the class at sixth grade.

-Reading achievement measured in the same way.

-Classroom teacher turnover rate.

The DELPHI Procedure

The procedure is outlined in some detail in Appendix I. Briefly, the procedure is as follows:

A group of experts is gathered together, preferably in an arrangement so they cannot talk with each other directly. The general objective is to employ an anonymous debate to arrive at a consensus estimate of an unknown value. The debate takes place in a series of rounds.

In the first round, the problem is posed to the experts, in this case, to determine the values of the performance measures given the project under consideration. These estimates are collected and analyzed. The analysis develops the median value and a measure of the spread of the values about that median (called the interquartile range). The respondents are then given the median and the interquartile range but are not told anyone else's specific estimates. Each respondent can see how far his estimate was from the median and how it fell within the calculated range.

The respondent is then requested to give another estimate. Respondents whose second estimate is outside of the range calculated from the first estimate are requested to give a justification for the unusual estimate.

The median and range for the second round is then presented to all participants as well as the comments made by those with estimates lying outside the range. These comments are presented, however, anonymously.

This procedure continues until a consensus is reached or some agreed upon number of rounds have been completed. Usually three or four rounds brings good consensus.

In the particular case, the experts were asked to make three estimates of the value of each indicator. These estimates were: the most likely value, an optimistic and a pessimistic value. These latter two values were those which the expert would not expect to be exceeded more than one time in ten.

Figure 1 shows typical results. These are the results for Program Set 1 - Case II which allows the student/teacher ratio to increase.

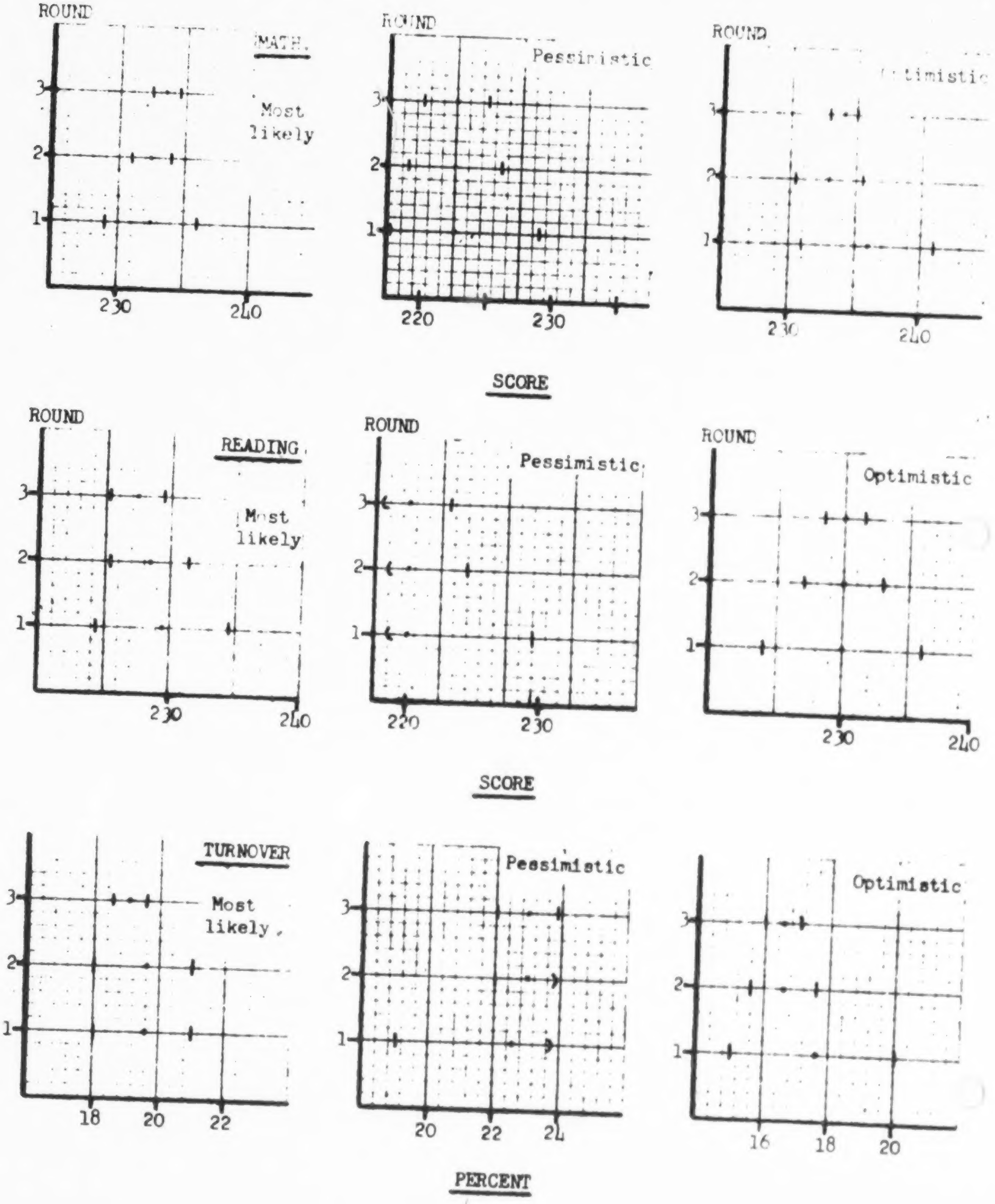
The top line of this figure shows the three estimates for math achievement: most likely, pessimistic, and optimistic. Note how as the rounds proceed, the range of estimates reduces in most cases, showing consensus. In this case the median shifted but little. (These scores are the raw scores of the math achievement test.)

Experts Used

The experiment was run with two separate groups, one consisting of four teachers selected from an elementary school in the district and the other consisting of four administrative personnel.

Figure 1

PROGRAM SET I-II, TEACHER GROUP



Teacher Results

We will consider first the results of the teacher group alone. These respondents' estimates did tend to converge after two or three rounds. The median of the estimates on each round did not change much, but rather the range of estimation becomes narrower. This result is due to the size of the groups considered. Since there were only four respondents in each group, the median (as the mean of the middle two estimates) is usually unaffected because changes are more likely to be made by persons away from the median.

This observation leads us to ask if the DELPHI rounds lead to estimates which are "significantly" different from say, the mean of the first round estimates. Table 1 contains the mean value for each point. These values are computed for the first and last round, and the estimate on the last round is said to be "significantly" different from that on the first if the first round mean lies outside the total range of estimation for the final round. (Note that this is not the standard use of the term "significant.") The values which are determined to be significantly different are denoted by.*

Set	Round	Math Ach			Read Ach			Turn Rate		
		ML	P	O	ML	P	O	ML	P	O
1-I	First	.25	-7.75	5.5	.75	-8	5.75	.25	3.5	-.75
	Last	0.0*	-7.5	7	.25	-10	6.5*	1	4.5	-.875
1-II	First	-8	-17.5	-4.5	-13.75	-21.25	-8.75	6.25	8	4.75
	Last	-6.75	-16.5	-5.5	-14.25	-22.5	-10.5	5*	8	3
2	First	5.75	0.0	8.75	8	1.25	20	-1	2	-3.25
	Last	5.25	1.5*	9	7.5	2.5	12.25	0.0*	1.75	-.75*
3	First	6.25	-.75	10.5	8	-.5	12.5	1.0	1.25	-3.5
	Last	5.25*	.25*	9.5*	6.25*	.5*	10.5*	0.0	.75	-.75*

Table 1

We see from this table that 13 out of 36 estimates changed "significantly" during the course of the experiment. These shifts, along with the smaller range over which the estimates varied, indicate that the DELPHI procedure leads to a set of estimates which is different from, and which has a narrower margin of error than, a set of values obtained as the mean of the experts first estimates.

Administrator Results

The administrator group exhibited similar characteristics. Median values did not change much from round to round, but the range of estimation became smaller. Table 2 shows the mean value of the four estimates for each point for the first and last rounds.

Since program set 3 was estimated only once for this group, we eliminate the calculation for significance for this set and find that 12 out of 27 estimates changed "significantly" during the course of the experiment.

Set	Round	Math Ach			Read Ach			Turn Rate		
		ML	P	O	ML	P	O	ML	P	O
1-I	First	.5	-4.5	11.25	0.0	-5	10.5	.75	4.25	-2.5
	Last	.5	-2.75*	10*	0.0*	-3	6.75*	.75	3.75	-2.5
1-II	First	-3.25	-12	0.0	-4.75	-11.75	-1	4.75	7	1.5
	Last	-3.75	-13.5	0.0	-7.75*	-13.5*	-2*	3.25	7	.25*
2	First	6	-2.5	11.5	4.5	.25	11	1.25	4.25	-.5
	Last	4.75	-2.25	9	2.25*	-1.25*	8*	1.25	3.75	.5*
3	First	10.5	0	20	11.75	2	23.75	0.0	2.75	-1.25
	Last	10.5	0	29	11.75	2	23.75	0.0	2.75	-1.25

Table 2

Differences Between Groups

Table 3 presents the mean, median and total range of the estimates on the final round. The differences which appear between the teacher group and the administrator group cannot be tested for statistical significance as the sample size is too small, but we can make some observations about trends which seem to be evident. The first general observation is that the administrator group converged to an answer more rapidly in each case, and that the final range of estimation is narrower for this group in more cases than not.

		Program Set 1-I					
		Teacher			Administrator		
		Mean	Median	Total Range	Mean	Median	Total Range
Math	ML	0.0	0.0	--	.5	0.0	0, 2
	P	-7.5	-7.5	-8, -7	-2.75	-3	-4, 0
	O	7	7.5	3, 10	10	10	--
Read	ML	.25	0	0, 1	0	0	--
	P	-10	-8	-20, -5	-3	-2	-7, -1
	O	6.5	8	0, 10	6.75	7.5	2, 10
Turn Rate	ML	1	1	0, 2	.75	0	0, 3
	P	4.5	5	0, 8	3.75	4	1, 6
	O	-.875	0	-5, 1.5	-2.5	-2.5	-5, 0

		Program Set 1-II					
		Teacher			Administrator		
		Mean	Median	Total Range	Mean	Median	Total Range
Math	ML	-6.75	-6.5	-9, -5	-3.75	-3.5	-5, -1
	P	-16.5	-17.5	-20, -11	-13.5	-13	-15, -13
	O	-5.5	-6	-9, -1	0	0	--
Read	ML	-14.25	-12.5	-18, -10	-7.75	-7	-9, -7
	P	-22.5	-22.5	-30, -15	-13.5	-13	-16, -12
	O	-10.5	-10	-14, -8	-2	-2	--
Turn Rate	ML	5	5.5	4, 6	3.25	3	1, 6
	P	8	8.5	6, 10	7	4.5	3, 16
	O	3	3.5	2, 5	.25	0	0, 1

		Program Set 2					
		Teacher			Administrator		
		Mean	Median	Total Range	Mean	Median	Total Range
Math	ML	5.25	5.5	4, 6	4.75	5	2, 7
	P	1.5	1	0, 4	-2.25	-2.5	-4, 0
	O	9	8	5, 15	9	9.5	5, 12
Read	ML	7.5	8	5, 9	2.25	3	0, 3
	P	2.5	2.5	3, 8	-1.25	0	-5, 0
	O	12.25	11.5	6, 20	8	8	--
Turn Rate	ML	0	0	--	1.25	1	0, 3
	P	1.75	2	1, 2	3.75	3.5	2, 6
	O	-.75	-1	-3	5	0	0, 2

		Program Set 3					
		Teacher			Administrator		
		Mean	Median	Total Range	Mean	Median	Total Range
Math	ML	5.25	5	5, 6	10.5	10	10, 12
	P	.25	0	0, 1	0	0	--
	O	9.5	10	8, 10	20	20	15, 25
Read	ML	6.25	6	5, 8	11.75	11.5	10, 14
	P	.5	0	0, 2	2	0	0, 8
	O	10.5	10	10, 12	23.75	20	20, 35
Turn Rate	ML	0	0	-2, 2	0	0	-2, 2
	P	.75	0	0, 3	2.75	2.5	0, 6
	O	-.8	0	-3, 0	-1.25	-1	-3, 0

The administrator group is more optimistic about things as they are now than is the teacher group. In both cases in program set 1, the administrators felt the school system would do better than did the teachers. Indeed, when no changes were made to the system (case I), the administrators felt that the indicators would probably improve, while the teachers felt the opposite. In Case II, both groups felt that things would get worse, but the administrators weren't nearly so pessimistic as the teachers.

In program set 2, when ETV is introduced, the administrators become more cautious than the teachers. The estimates for the math score are very close between groups, but the teachers estimated reading scores much higher than the administrators.

Finally, in program set 3, the administrators once again exhibit their optimism. They indicate that both math and reading scores will improve by twice as much as do the teachers. It would seem that the administrators expect much more from an in-service program than do the teachers.

Reliability of Estimates as Predictors

Students in the sixth grade bottom tenth precentile are currently achieving at the 23rd and 25th national percentile equivalent ranks in reading and math, respectively. With program set 2 in effect, the teacher group would have these students achieving at the 37th and 34th (present) national percentile equivalent ranks and the administrator group would have the students achieving at the 29th and 33rd national ranks in reading and math, respectively. With program set 3 in effect, the teacher group projects these students to the 33rd and 34th ranks, and the administrator group puts them in the 44th and 47th national equivalent ranks. These data are summarized in Table 4.

Table 4

Program Set		National Percentile Equivalent Rank*		
		Present	Teacher	Administrator
2	Read	23	37	29
	Math	25	34	33
3	Read	23	33	44
	Math	25	34	47

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*These equivalents are based on present national norms, and have not been projected five years hence.

These equivalents seem rather high. Thus, it would be worthwhile to repeat this experiment using present percentile levels as a basis for estimation rather than scores. The estimates obtained for projected percentile increases or decreases could then be compared to the percentile equivalents of the scores estimated in this experiment.

Conclusions

The results of this experiment indicate that the DELPHI technique has merit as a device to ascertain subjective estimates in the educational context. The comments, both written and verbal, of the participants in this experiment indicated that they were impressed with the method. They felt that it could be used to establish projected outcomes, but that these projections should be supplemented by data from pilot programs implemented in the district.

We suggest that the DELPHI procedure could be used to select the most promising of many proposed projects. Then the selected projects could be pilot tested. The effect of the project could be determined after the pilot was implemented for a sufficient period of time. This would provide a basis for evaluating the accuracy of DELPHI estimates, and would suggest improvements in the procedure.

The procedures employed in this experiment can be improved upon. First, the group tested should be large enough to avoid the problems encountered with the constancy of the median estimate. Second, the respondents in the experiment should be separated physically if possible. Persons together in a room tend to converse and it becomes difficult to maintain anonymous estimates. Finally, it must be remembered that experts may be unaccustomed to thinking in terms of outcomes. We would expect that their ability as predictors would improve with experience. Indeed, once educators are attuned to thinking about exactly what effect a new program may have, we feel that the DELPHI technique will provide valuable inputs to the educational decision process.

APPENDIX I

PURPOSE AND GENERAL DESIGN

PURPOSE AND GENERAL DESIGN

Introduction

One aspect of the PPBS cycle is the selection of preferred program sets. The purpose of this note is to propose research into the question of how this selection can be improved. This work has two phases: first, the outcome of each program set must be estimated; second, the program sets must be ranked according to preference for the estimated outcomes. The first phase of this work is described in detail herein. The second phase will proceed by attempting to ascertain the school district's utility for the estimated outcomes. This information will be elicited by means of questions asked of the district's policymaker's, and it will provide the basis for establishing a preference relation on the program sets. This phase will be described in detail at a later date.

In order to perform the analysis required to make the "best" selection, it is necessary to estimate the benefits which may accrue from implementing each set. These benefits may be represented by expected changes in present indicator levels. Since no theory exists to relate educational inputs and the educational process to educational outcomes, we must rely on expert judgement to provide estimates estimates of these changes. Further, since the estimates are based on relevant experience, it is desirable to use a group of experts. A more reliable estimate could then be obtained because the pool of experience from which we may draw has been deepened and widened, and because it more nearly approximates the spread in the school district itself.

The effect which a program set may have on an indicator is uncertain. It may lie within a wide range of values, depending on many factors. Any analysis, which properly takes account of this range, is superior to any analysis which does not. We therefore desire a procedure to obtain not only an estimate of the most likely change, but also an estimate of the range within which the actual change may fall. There are then two aspects of the estimation problem which we must consider. First, how do we obtain reliable estimates of the points in question; second, how do we get consensus estimates from a group of experts?

Estimation

We propose to ask three questions in order to obtain the needed estimates. These questions are based on similar ones used in the PERT (Program Evaluation and Review Technique) analysis to obtain estimates of the time it would take to complete some specified activity. The experience gained in PERT type applications indicates that these questions provide reliable estimates if their intent is well understood. Thus, the respondents must be made to realize that:

1. Estimates should be submitted which are appropriate if the program set is implemented in the present environment and is run properly.

2. Values submitted are only estimates, they are not promises or commitments.
3. Estimates should not include allowance for events which occur very infrequently; e.g., acts of nature, fire, etc.

Then, keeping these points in mind, we will pose the following questions:

A. If this program set were implemented in this district, what is your estimate of the most likely effect it would have on the ___ indicators, five years hence?

B. What is your pessimistic estimate of the effect it would have; that is, there is only one chance in ten of doing worse than your estimate.

C. What is your optimistic estimate of the effect; that is, there is only one chance in ten of doing better than your estimate.

Consensus

In order to obtain consensus estimates of the three points in question, we propose to use the DELPHI technique which has been developed at the RAND Corporation to deal with such problems. This technique has been used successfully by Reisman and Taft* in a California school to obtain consensus estimates of the contribution which ten different pieces of audio visual equipment would make to the objectives of the school.

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*Taft, M.I. and A. Reisman. "A Systems Approach to the Evaluation and Budgeting of Educational Programs." A paper presented to the 34th National ORSA meeting, Philadelphia, November, 1968.

DELPHI employs an anonymous debate to arrive at a consensus estimate of an unknown number. In a series of rounds, respondents are asked to make the estimate in question. These estimates are collected, analyzed, and returned. In the second round the respondents are provided with the median and the interquartile range of the first round estimates; they are not told who made which estimate. They are then asked to re-estimate, and if their new estimate lies outside the interquartile range, they are asked to state, in writing, their reason for this estimate. The new estimates and the outliers' reasons are collected and the new median, the new interquartile range, and the reasons are provided to the respondents for the next round. This procedure terminates when a consensus has been achieved. Experience indicates that three or four rounds are sufficient.

The purpose in using this technique is to achieve fast convergence, and to obtain estimates which are free of any bias. The anonymity of the technique removes the biases which are likely in a face-toface debate. The influence of a dominant personality is not allowed to flourish.

PROPOSED EXPERIMENTAL DESIGN

In order to use the results of this work in testing a procedure to select among program sets, we propose to consider three indicators and three program sets. We further desire to question two groups of about four people each, one composed of teachers and one composed of administrators.

The indicators which we have chosen to consider are defined as follows:

1. Sixth Grade Math Achievement at the Tenth Percentile Rank -- the median score achieved by students at the tenth percentile rank in math on the STEP test administered in the fall.
2. Sixth Grade Reading Achievement at the Tenth Percentile Rank -- the median score achieved by students at the tenth percentile rank in reading on the STEP test administered in the fall.
3. Classroom Teacher Turnover -- the percentage of classroom teachers who will terminate their employment with the school district.

The program sets that we wish to consider are outlined as follows:

Program Set #1

Maintain the present level of activity in the schools for the next five years; that is, continue present school district programs, do not institute any new ones, and hire only enough classroom teachers to:

CASE I -- maintain the current pupil/teacher ratio.

CASE II --fill any vacancies which occur as a result of teacher separations, but hire no additional teachers as a result of increased enrollment. Here we are allowing the pupil/teacher ratio to rise.

Program Set #2

Continue present programs, maintain the current pupil/teacher ratio, and institute a new program which will make ETV facilities available to all elementary teachers in math and reading classes. The following is an outline of the proposed program:

Facilities

1. There will be one (1) receiver per classroom.
2. Teacher guides will be provided.
3. Pupil study guides and workbooks will be provided.
4. Supervisory and technical consulting help will be available.

Schedule

1. The schedule will be confined to the sender's (Channel 12) schedule.
2. Pupils will receive the following exposure each week in each subject (math and reading):

K - 2 periods at 20 minutes each
1 - 2 periods at 20 minutes each
2 - 2 periods at 30 minutes each
3 - 2 periods at 30 minutes each
4,5,6 - 3 periods at 30 minutes each

Program

1. The content of the program will be directed toward the slow learner. Its purpose is to provide drill, response, and reinforcement exercises.
2. The programs will be designed to achieve a defined measurable behavioral objective.
3. In the reading program, heavy emphasis will be placed on phonics and phonetic skills and work analysis.
4. In the math program, emphasis will be placed on understanding the fundamentals of modern math. The programs will attempt to relate basic math concepts to everyday objects and occurrences which the children can comprehend.
5. Finally, it must be emphasized that these programs are designed to supplement the classroom teacher. Their purpose is to provide concentrated exposure to material

which will stimulate the student and thus enhance the classroom presentations made by the teacher.

Program Set #3

Continue present programs, maintain the current pupil/teacher ratio, and conduct on-going in-service courses for elementary teachers in math and reading. An outline of these courses follows:

When

1. Each month during the school year a two hour session will be conducted. These meetings will consist of sessions in math in one month, and sessions in reading in the next, and will alternate for the duration of the school year. Early release from class will be granted for attendance at these sessions, and all elementary teachers will be required to attend.
2. A two week long course in math and a two week long course in reading will be conducted each summer. Attendance at these sessions will be voluntary, and participants will be paid at the going rate.

Program

1. Courses will be conducted by highly trained specialists. Emphasis will be placed on diagnosis, prognosis, and prescription for the slow learner.
2. Teachers will be expected to complete assignments.

3. Reading teachers will be exposed to an array of the newest methods and materials available to teach elementary reading.
4. Math courses will emphasize a solid grounding and/or updating in the newest methods and materials available.
5. Any new materials which the teachers are trained to use, will be made available for use in the classroom during the regular program.

Respondents

The composition of the groups to be questioned has been tentatively agreed upon. The administrator group will consist of one elementary principal, one counselor, and two deans of instruction. These persons are all associated with the elementary level since the program sets are designed to affect indicators at that level. The teacher group should represent a cross section of the elementary teachers in the Pennsbury District. We have tentatively agreed on four teachers with the following characteristics: one each from the first, third, fifth, and sixth grades, each with a different level of experience. A distribution of 3, 5, 6, 10 years of experience is desirable.

DETAILED SCHEDULE OF ACTIVITIES

Preliminaries

1. Agreement on date, time, place, and persons to be involved.
2. Upon agreement, send copies of a paper to be disseminated to each of the participants in advance of the experiment. This paper will contain a discussion of the purpose of the experiment, and the procedure to be followed. It will also contain a description of the program sets and a description of the indicators to be considered, along with a statement about the present level of each indicator.

The Experiment

Respondents will be briefed on the experiment (15 minutes). This briefing will cover the questions to be asked and will attempt to lay the proper groundwork for answers to these questions. Also, the nature and mechanics of the DELPHI procedure will be explained.

A. Begin Program Set #1 (45 minutes)

Round 1

Respondents will be asked to consider Program Set #1 implemented in the district and to make their best estimate of its effect five years hence. Thus, they must estimate nine numbers as indicated in the following table:

Indicator	Most Likely	Pessimistic	Optimistic
1	#1	#2	#3
2	#4	#5	#6
3	#7	#8	#9

The estimates will be written by the respondents on a form identified only by code. These forms will be collected, the data transcribed, and the forms returned to the respondents for reference for round two.

Round 2

Respondents will be informed of the median and the interquartile (IQ) range of their estimate for Cell #1 of the above table. They are then asked to make a new estimate, not necessarily different, based on this information. If their new estimate lies outside the IQ range presented, they are asked to state briefly their reason for this estimate. The new estimate and statement, if any, are written on a new form.

Similar data are presented for cells two through nine and the forms are again collected, the data transcribed and the reasons detached, and the forms returned.

Round 3

Respondents are informed of the median and the interquartile range and any outliers reasons for Cell #1. They are again asked to re-estimate and if they lie outside the new IQ range to state their reason. This procedure is continued for cells two through nine. The forms are again collected, the data transcribed, reasons removed, and the forms returned.

Round 4

Same as round 3. The maximum number of rounds conducted will be four because of time limitations. If no consensus is reached after four rounds, it is doubtful that it will be reached soon.

END PROGRAM SET #1

B. Begin Program Set #2

Same procedure will be followed for program sets two and three as was described for Program Set #1.

END EXPERIMENT

APPENDIX II

INSTRUCTIONS FOR PARTICIPANTS

You have been asked to participate in an experiment in educational decision making. The purpose of this experiment is to test the applicability of some formal decision making concepts to certain decisions which are made in the school district. This work forms a part of the overall Planning, Programming, and Budgeting System project in which your district is participating.

You will be part of a group who will be asked to make estimates of the effect which certain specified program changes (called program sets) in the school district make on certain measures of pupil and district performance (called indicators). We will consider three program sets and three indicators in this experiment, and you will be asked to make three estimates for each set and for each indicator. These estimates are: 1) your best estimate of each program set's most likely effect on each indicator, 2) your pessimistic estimate of each set's effect on each set's effect on each indicator, and 3) your optimistic estimate of each set's effect on each indicator.

Our purpose is to obtain group estimates of these points. In order to accomplish this end, we will employ the DELPHI procedure to collect the estimates. In this procedure, we consider one program set at a time. We proceed through successive estimation rounds, with anonymous feedback between each, to arrive at group estimates of the points in question. In each round you will be asked the following questions for each indicator:

1. If this program set were implemented in this district, what is your estimate of the most likely effect it would have on the ___ indicator, five years hence?
2. What is your pessimistic estimate of the effect it would have; that is, there is only one chance in ten of doing worse than your estimate.
3. What is your optimistic estimate of the effect; that is, there is only one chance in ten of doing better than your estimate.

Your answers to these questions will be written by you on the forms provided. At the end of each round, these forms will be collected, the data transcribed, and the forms returned to you. At no time will any other member of the group be made aware of anyone else's estimate. To preserve this anonymity while providing feedback, we will give the group the median and the interquartile* range of the group's estimates for each point, prior to second round estimation. At the end of the second round, the same procedure will be followed with the addition that anyone whose new estimate lies outside the interquartile range for that point will be asked to write briefly why he or she feels this is so. These reasons, along with the new median and interquartile range, will then be provided as feedback for the next round. The estimation for the first program set continues until either a consensus is reached or four rounds have elapsed.

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*The interquartile range is defined as the range within which the middle fifty percent of the estimates lie.

The procedure is then repeated for each of the two remaining program sets.

In order for this experiment to be of use to the district, certain points must be emphasized. First, estimates should be submitted which are appropriate if the program set is implemented in the present environment and the programs are run properly. Second, the values submitted are estimates, not promises or commitments, yet we ask you to consider carefully before you estimate. Finally, the program sets which you will consider are realistic but they are not necessarily under consideration by the district. We ask you to consider them as if they were, and give us your best estimate of the effects they would have if implemented.

These instructions, along with the following descriptions of the indicators and the program sets, will be reviewed before we begin.

INDICATORS

The indicators which we have chosen to consider are defined as follows:

1. Sixth Grade Math Achievement at the Tenth Percentile Rank -- the median score achieved by students at the tenth percentile rank in math on the STEP test administered in the Fall. Presently, this score is 240, and the national norm at this level is 232.
2. Sixth Grade Reading Achievement at the Tenth Percentile Rank -- the median score achieved by students at the tenth percentile rank in reading on the STEP test administered in the Fall. Presently, this score is 242, and the national norm at this level is 233.
3. Classroom Teacher Turnover Rate -- the percentage of classroom teachers who will terminate their employment with the school district. Presently, this rate is 14% a year.

PROGRAM SET #1

Maintain the present level of activity in the schools for the next five years; that is, continue present school district programs, do not institute any new ones, and hire only enough new classroom teachers to:

CASE I -- maintain the current pupil/teacher ratio.

CASE II --fill any vacancies which occur as a result of teacher separations, but hire no additional teachers as a result of increased enrollment. Here we are allowing the pupil/teacher ratio to rise.

PROGRAM SET #2

Continue present programs, maintain the current pupil/teacher ratio, and institute a new program which will make ETV facilities available to all elementary teachers in math and reading classes. The following is an outline of this program:

Facilities

1. There will be one (1) receiver per classroom.
2. Teacher guides will be provided.
3. Pupil study guides and workbooks will be provided.
4. Supervisory and technical consulting help will be available.

Schedule

1. The schedule will be confined to the sender's (Ch. 12) schedule.
2. Pupils will receive the following exposure each week in each subject (math and reading):

K -- 2 periods at 20 minutes each

1 -- 2 periods at 20 minutes each

2 -- 2 periods at 30 minutes each

3 -- 2 periods at 30 minutes each 4,5,6 -- 3 periods at 30 minutes each

Program

1. The content of the program will be directed toward the slow learner. Its purpose is to provide drill, response, and reinforcement exercises.
2. The programs will be designed to achieve a defined measurable behavioral objective.
3. In the reading program, heavy emphasis will be placed on phonics and phonetic skills and work analysis.
4. In the math program, emphasis will be placed on understanding the fundamentals of modern math. The programs will attempt to relate basic math concepts to every day objects and occurrences which the children can comprehend.
5. Finally, it must be emphasized that these programs are designed to supplement the classroom teacher. Their purpose is to provide concentrated exposure to material which will stimulate the student and thus enhance the classroom presentations made by the teacher.

PROGRAM SET #3

Continue present programs, maintain the current pupil/teacher ratio, and conduct ongoing in-service courses for elementary teachers in math and reading. An outline of these courses follows:

When

1. Each month during the school year a two hour session will be conducted. These meetings will consist of sessions in math in one month, and sessions in reading in the next, [illegible] will alternate for the duration of the school year. Early release from class will be granted for attendance at these sessions, and all elementary teachers will be required to attend.
2. A two week long course in math and a two week long course in reading will be conducted each summer. Attendance at these sessions will be voluntary, and the participants will be paid at the going rate.

Program

1. Courses will be conducted by highly trained specialists. Emphasis will be placed on diagnosis, prognosis, and prescription for the slow learner.
2. Teachers will be expected to complete assignments.

3. Reading teachers will be exposed to an array of the newest methods and materials available to teach elementary reading.
4. Math courses will emphasize a solid grounding and/or updating in the newest methods and materials available to teach math.
5. Any new materials which the teachers are trained to use, will be made available for use in the classroom during the regular program.

Duration

1. These courses will be conducted each year for the next five years.

APPENDIX III

DATA FORMS

A / B 1 2 3 4

PROGRAM SET ____

ROUND ____

Math, ML -- ____

Math, P -- ____

Math, O -- ____

Read, ML -- ____

Read, P -- ____

Read, O -- ____

Turn, ML -- ____

Turn, P -- ____

Turn, O -- ____

A / B 1 2 3 4

PROGRAM SET 1

ROUND ____

CASE I

Indicator	Most Likely	Pessimistic	Optimistic
Math Ach			
Read Ach			
Turn Rate			

CASE II

Indicator	Most Likely	Pessimistic	Optimistic
Math Ach			
Read Ach			
Turn Rate			

PRIOR ROUND SUMMARY DATA

CASE I

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
Median									
Range									

CASE II

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
Median									
Range									

APPENDIX IV

TYPICAL DATA BY ROUND

A / B 1 2 3 4

PROGRAM SET 1

ROUND ____

CASE I

Indicator	Most Likely	Pessimistic	Optimistic
Math Ach			
Read Ach			
Turn Rate			

CASE II

Indicator	Most Likely	Pessimistic	Optimistic
Math Ach			
Read Ach			
Turn Rate			

PRIOR ROUND SUMMARY DATA

CASE I

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
Median									
Range									

CASE II

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
Median									
Range									

Teachers

PROGRAM SET 2

ROUND 1

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	C	ML	P	C
1	4	-2	5	5	-3	5	0	2	-.5
2	10	2	20	15	5	30	0	1	0
3	6	4	8	11	8	15	0	2	-5
4	5	0	8	5	0	8	0	2	-.3
Median	5.5	1	8	8	2.5	11½	0	2	-.25
Range	4 7	-½ 2½	4.2 11.8	5.5 10.5	-.2 5.2	5.2 17.8	—	1.8 2.2	-.38 [illegible]

Teachers

PROGRAM SET 2

ROUND 1

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
1	2	-4	5	1	-3	5	0	2	-2
2	10	5	20	15	5	50	0	1	0
3	6	4	1	11	8	15	-4	0	-6
4	5	-5	16	5	-5	10	0	5	-5
Median	5.5	0	8.5	8	1	12.5	0	1.5	-3
Range	3.5/7.5	-2.5/2.5	4.3/12.2	4.5/11.5	-1.4/3.2	12/23.8	-1/1	4.2/2.5	[illegible]

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TEACHERS

PROGRAM SET 2

ROUND 4

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
1	4	0	5	7	-3	6			
2	6	2	15	9	5	20			
3	6	4	8	9	8	15			
4	5	0	8	5	0	8			
Median	5.5	1	8	8	2.5	11.5			
Range	5 | 6	0 | 2	5.5 | 15.5	7 | 9	-1 | 6	8 | 15			

Teachers

PROGRAM SET 2

ROUND 3

	Math Ach			Read Ach			Turn Rate		
	ML	P	O	ML	P	O	ML	P	O
1	4	0	5	6	-3	6			0
2	10	2	20	10	5	30			-2
3	6	4	8	10	8	15			0
4	5	0	8	5	0	8			2
									-3
Median	4.5	1	8	8	2.5	11.2			-1
Range	3 / 6	0 / 2	4.2 / 11.8	6.4 / 9.2	-.2 / 6.2	5.5 / 17.5			-2.2 / 2

Appendix B

Inventory of Automated Programs and Reports

Program Name	Program Purpose	Module
Enrollment Simulator	Projects Y1-Y5 enrollment by ethnic group, by grade, and by school.	ENROLLMENT
Basic File Playback and Planning Unit Cost Model	Prints formatted reports of all data input and projects Y1-Y5 costs by planning unit.	COST
Program Cost Model	Aggregates Y1-Y5 planning unit costs by program and prints detail program reports and resource requirement summary for the district.	COST
Site Cost Model	Aggregates Y1-Y5 planning unit costs by site and prints site detail reports.	COST
Project Cost Model	Aggregates Y1-Y5 planning unit costs by project and prints project detail reports.	COST
Trend Analysis	Projects data series values into the future.	REVENUE
Revenue Simulator	Projects Y1-Y5 revenues by source, and tests revenue feasibility of a program.	REVENUE

Report Name	Contents	Module
Ethnic Composition of Census Tracts for 1970	1970 non-white and white population by census tract, ratio of 1970 ethnic group population by census tract to 1970 total ethnic group population.	ENROLLMENT
Ethnic Group Population Forecast	CY and Y1-Y5 ethnic group population forecast by time trend.	ENROLLMENT
Ethnic Group Population Forecast	CY and Y1-Y5 ethnic group population forecast by estimation of district planners.	ENROLLMENT
Racial Composition of Census Tracts in Percents	Racial composition of census tracts in percent for 1940, 1950, 1960, 1970 and the CY and Y1-Y5.	ENROLLMENT
Population Forecast	Population forecast by census tract, by ethnic group for 1970 and the CY and Y1-Y5.	ENROLLMENT
Population Density	Population density per gross acre for 1970 and CY and Y1-Y5, and also per residential acre.	ENROLLMENT
Assignment of School Service Areas to Census Tracts	Lists the percent of a census tract (based upon area) in a school service area for all public schools.	ENROLLMENT
Public Enrollment Factors	Lists CY public enrollment by ethnic group, by grade, CY total population by ethnic group, and the CY enrollment per thousand in the CY population by ethnic group and grade.	ENROLLMENT

Report Name	Contents	Module
School Enrollment Forecast	CY actual enrollment and Y1-Y5 enrollment forecast by ethnic group, by grade, and by school, and by ethnic group, by grade group, by school.	ENROLLMENT
Enrollment Forecast by Grade	CY actual enrollment and Y1-Y5 enrollment forecast by grade, and total.	ENROLLMENT
Secondary Enrollment Forecast	CY actual secondary enrollment by ethnic group, by secondary program, percent composition of each secondary program by ethnic group to total secondary enrollment, and Y1-Y5 secondary enrollment forecast by ethnic group, by secondary program.	ENROLLMENT
Enrollment Forecast by Program	CY actual enrollment and Y1-Y5 enrollment forecast by program, by ethnic group.	ENROLLMENT
Enrollment Forecast by School	CY actual enrollment and Y1-Y5 enrollment forecast by school.	ENROLLMENT
Special Education Enrollment Forecast	Special education enrollment factor per thousand in the population by ethnic group for the current year, and the CY actual special education enrollment, and Y1-Y5 special education forecast by ethnic group, by level.	ENROLLMENT

Report Name	Contents	Module
Continuing Education Forecast	Continuing Education enrollment factor per thousand in the population by ethnic group for the current year, and the CY actual and Y1-Y5 forecast of continuing education enrollment by ethnic group.	ENROLLMENT
Summary of Enrollment Forecast Input for Revenue Simulator	CY and Y1-Y5 enrollment forecast by enrollment category for input to the Revenue Module.	ENROLLMENT
Playback Report	Formatted reports of data input for each permanent data input type and by planning unit.	COST
Planning Unit Detail	Y1-Y5 costs by cost type (staff, non-staff, capital outlay, and local cost) for a planning unit.	COST
Program Detail	Y1-Y5 costs by cost type by program.	COST
Program Summary	Y1-Y5 cost summary by program.	COST
Site Detail	Y1-Y5 costs by cost type by site.	COST
Project Detail	Y1-Y5 costs by cost type by project.	COST
District Resource Requirements Summary	CY and Y1-Y5 costs by cost type.	COST
Manpower	Y1-Y5 number of positions by staff type and the number of hires by staff type for the district.	COST

Report Name	Contents	Module
Real Estate Tax Revenue Forecast	Y1-Y5 total real estate tax revenues at the current year tax rate.	REVENUE
Transportation Aid Forecast	Y1-Y5 expected Transportation Aid.	REVENUE
Atypical Pupil Aid Forecast	Y1-Y5 expected Atypical Pupil Aid.	REVENUE
Formula Aid Forecast	Y1-Y5 Formula Aid and Y1-Y5 Total Present Aid	REVENUE
Revenue Forecast, All Local Sources	Y1-Y5 Revenues by Local Source, and Total Revenue All Local Sources.	REVENUE
Revenue Forecast, All Federal Sources	Y1-Y5 revenues by federal current expense source and total revenue from federal Current expense sources, and Y1-Y5 revenues by federal categorical source and total revenue from federal categorical sources.	REVENUE
Enrollment Data Input to Incentive-Equalization Aid Formula	Y1-Y5 resident enrollment by enrollment category and Y1-Y5 weighted enrollment by enrollment category.	REVENUE
Equalized Tax Rate for Incentive-Equalization Aid	Y1-Y5 equalized school tax rate used in calculating incentive-equalization aid.	REVENUE

Report Name	Contents	Module
State Incentive-Equalization Forecast	Y1-Y5 state aid payable under Incentive-Equalization Aid.	REVENUE
Revenue Forecast, All State Sources	Y1-Y5 revenues by state current expense source and total revenues from state current expense sources, and Y1-Y5 revenues by state categorical source and total revenue from state categorical sources.	REVENUE
Total Revenue Forecast	Y1-Y5 total current expense revenues, Y1-Y5 total categorical revenues, and Y1-Y5 total revenues from all sources.	REVENUE
Revenue Feasibility for the Current Expense Program	Y1-Y5 total current expense revenues, Y1-Y5 total current expense costs, and Y1-Y5 real estate tax rate required to cover any Y1-Y5 deficit.	REVENUE
Revenue Summary Report	Y1-Y5 revenue summary by major source: real estate tax, other local sources, state, and federal, and annual revenues by source as a percent of annual operating costs.	REVENUE